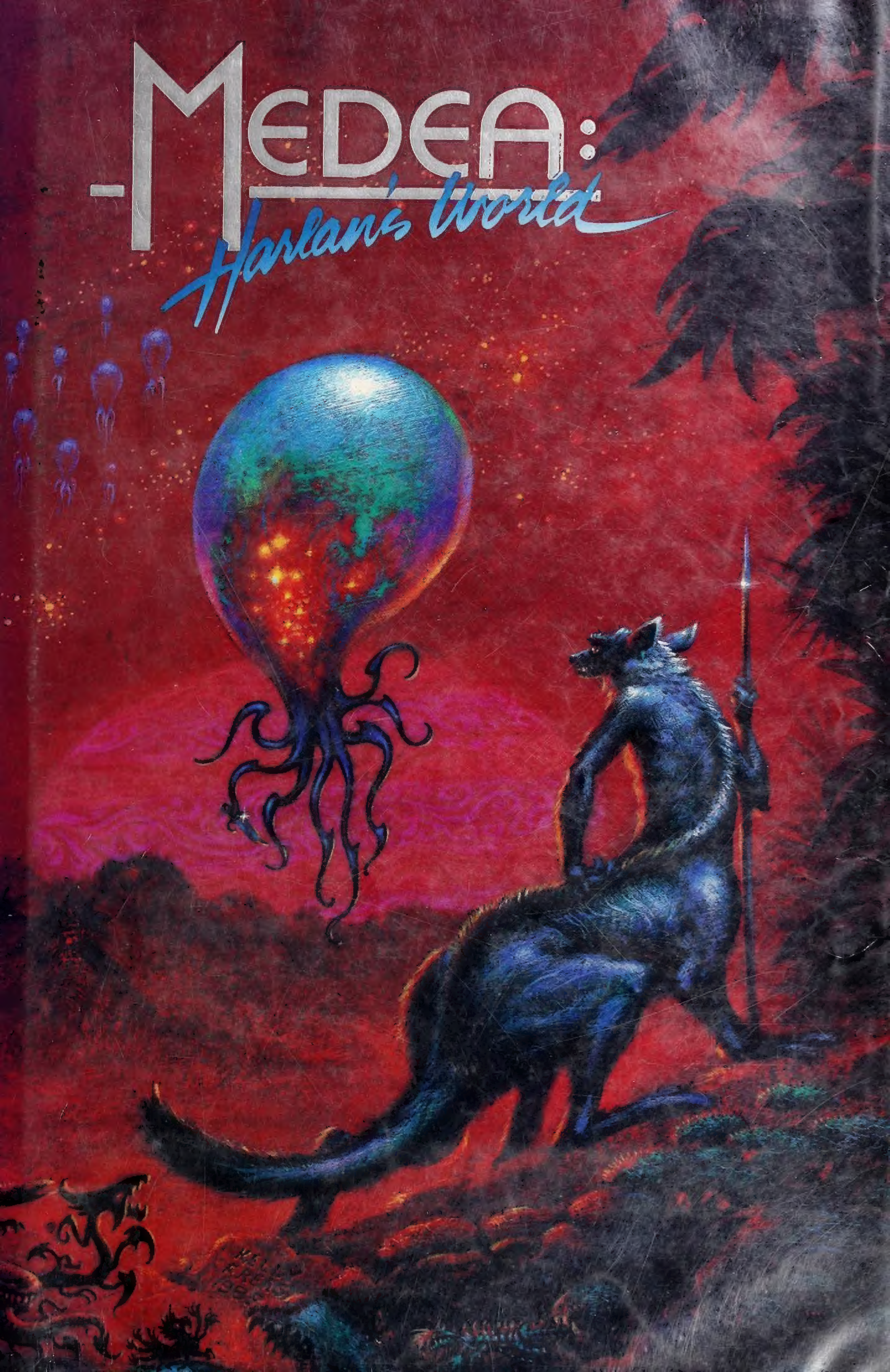
MEDEA:
Harlan's World



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FOR YOU, IT STARTS WITH THE DREAM

The dream of author/gadfly Harlan Ellison to answer, once and for all, by demonstration, the question not even Socrates could answer: *Where do ideas come from?* The dream of creating a literary environment where an even dozen of the most brilliant writers and artists of our time could create a planet, from cosmic dust, from the chained lightning of their imaginations, and populate it, and write stories that take place on its mythic, pragmatic surface.

He enlisted other dreamers to build the specs of that world: Hal Clement, the guiding intelligence behind Iceworld and Mesklin; Poul Anderson, creator of Dominic Flandry and the Time Patrol; Larry Niven, of Ringworld fame; and Frederik Pohl, who originated the Heechee and co-created the Space Merchants. Then the vision was passed on to Frank Herbert, landlord of Dune; Robert Silverberg, father of Lord Valentine and the Book of Skulls; Thomas Disch, the mad thinker of Camp Concentration and 331; and Theodore Sturgeon, lover of the dreaming jewels, who some say is more than human. The pictures were painted by Freas, and more words came from Kate Wilhelm (She Who Must Be Read) and he of the golden blood, Jack Williamson, dark dreamer of the Humanoids; and even Ellison wrote what critics had always said he could not write: a real science fiction story. They came, they saw, they dreamed.

And when it was done, it came together as a testament to the wild

(Continued on back flap)

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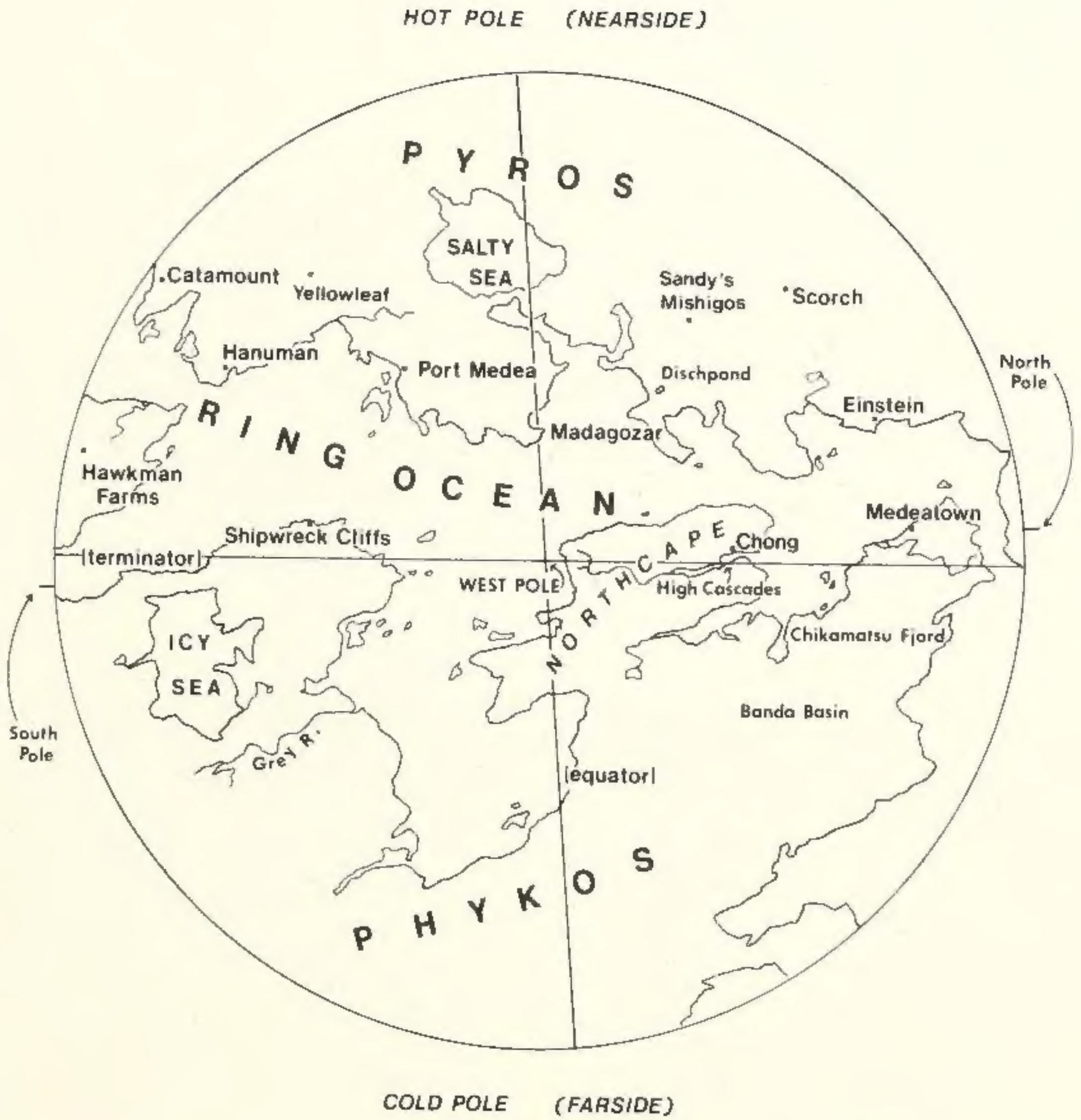
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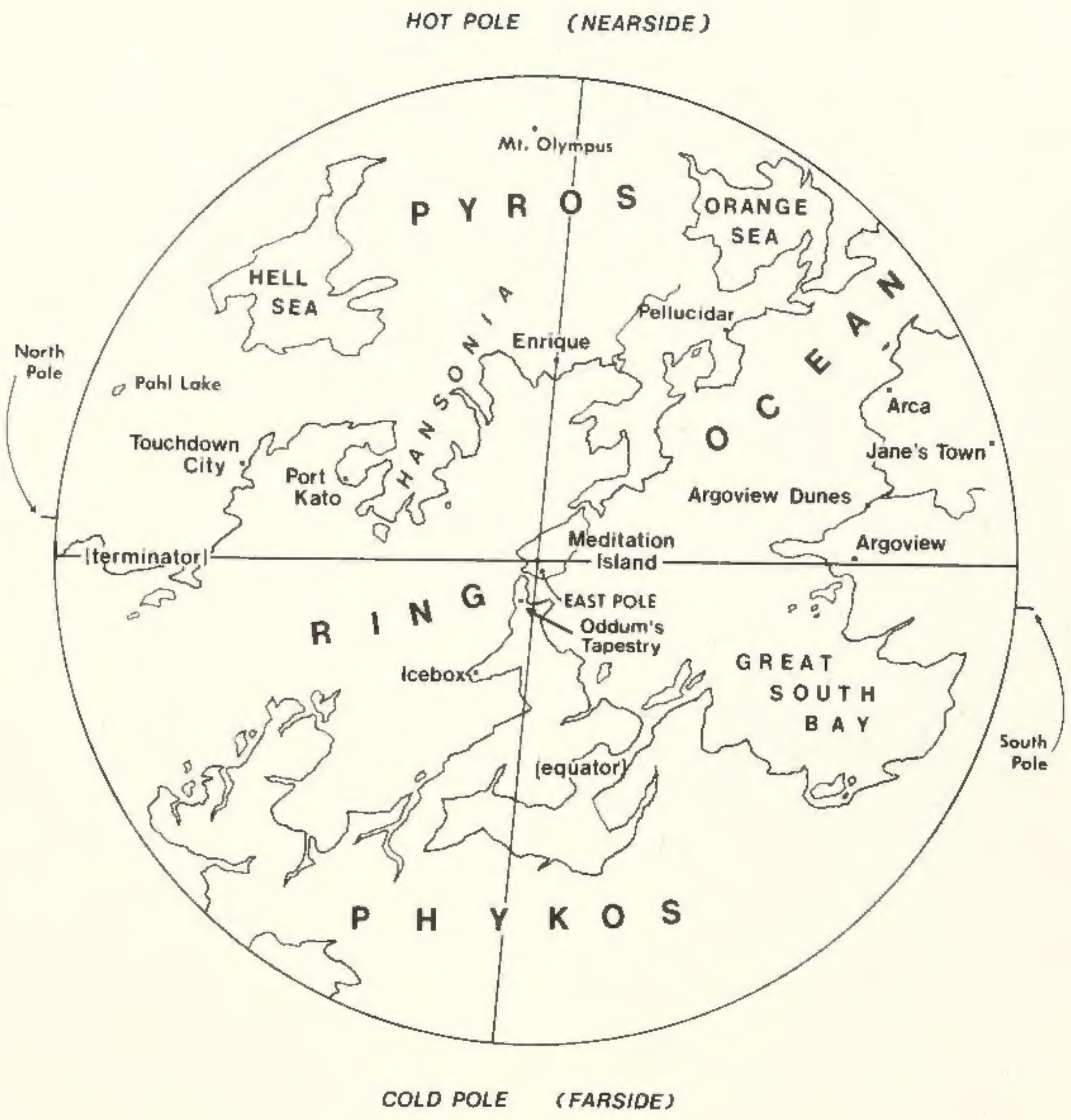
(western hemisphere)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Argoview
(terminator)
RING
EAST POLE
Oddum's Tapestry
Icebox
GREAT SOUTH BAY
South Pole
(equator)
PHYKOS
COLD POLE (FARSIDE)

MEDEA:
HARLAN'S WORLD
(eastern hemisphere)

MEDEA:
Harlan's World

by

JACK WILLIAMSON
LARRY NIVEN
HARLAN ELLISON
FREDERIK POHL
HAL CLEMENT
THOMAS M. DISCH
FRANK HERBERT
POUL ANDERSON
KATE WILHELM
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1985

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c.1

Dedicated in loving memory of
LEIGH BRACKETT and EDMOND HAMILTON
Creators of endless worlds.

Had we known the pain of missing
them, we would have told them
how much we loved them more often.

From all of us.

The Editor wishes to thank the many talented hands who assisted in the assembling of this project; but in particular Gil Lamont and Lou Aronica must be singled out for extraordinary effort and caring.

CONTENTS

Introduction: *Cosmic Hod-Carriers* Harlan Ellison 1

Part I *The Specs* 9

Introduction Harlan Ellison 11
Basic Concepts: Astrophysics, Geology Hal Clement 14
Geology, Meteorology, Oceanography, Geography, Nomenclature, Biology Poul Anderson 17
Biology, Ecology, Xenology Larry Niven 28
Xenology, Sociology, Politics, Theology, Mathematics Frederik Pohl 34

Part II *The Concept Seminar* 45

Participants: Thomas M. Disch
Frank Herbert
Robert Silverberg
Theodore Sturgeon
Moderator: Harlan Ellison

Part III *The Extrapolations, the Questions* 121

Contributed by the Audience of the Concept Seminar

Part IV *Second Thoughts* 171

Part V *The Stories* 185

Farside Station Jack Williamson 187
Flare Time Larry Niven 217
With Virgil Oddum at the East Pole Harlan Ellison 253
Swanilda's Song Frederik Pohl 269
Seasoning Hal Clement 295
Concepts Thomas M. Disch 321
Songs of a Sentient Flute Frank Herbert 357
Hunter's Moon Poul Anderson 401
The Promise Kate Wilhelm 433
Why Dolphins Don't Bite Theodore Sturgeon 461
Waiting For the Earthquake Robert Silverberg 509

MEDEA

Harlan's World

COSMIC HOD-CARRIERS

Harlan Ellison

Medea, a moon of the superjovian Argo, exists in the Alpha Geminorum system as the result of a decade's effort, by a cast of thousands. I was the straw-boss on the project.

This book may, once and for all, answer the mind-numbing question endlessly asked of fantasists and sf writers: *Where do you get your ideas?* Because, unlike codified answers intended primarily to drive the questioner back into eternal darkness, this singular project called *Medea* is a step-by-step *modus operandum* demonstrating not only *where* the ideas come from, but what one does with them once they've manifested themselves.

One of the pivotal contributors to this project, Robert Silverberg, in considering the feedback between a large university audience and the creators of some of these stories (memorialized in parts II and III), ventured the hope that *Medea* might revive the noble art of Socratic dialogue. The asking and answering of what-if questions. The thought-game called extrapolation.

Early in 1975, I was approached by the Arts, Humanities and Communication section of the UCLA Extension Department. What they wanted, they said, was an evening adult education course on "sci-fi."

After I stopped gritting my teeth at that loathsome neologism, I entered into discussions aimed at putting together not one but a series of showcase presentation evenings that would explore in greater scope the *core* of what is best about speculative fiction and fantasy: the use of imagination. To put up there on the stage each week the physical reality of "what if?" The sub-text of each program to be: anything is possible through imagination.

The series was titled *Ten Tuesdays Down a Rabbit Hole* and as straw-boss I was conceptualizer and host. The series ran from April 1st, 1975 through June 3rd. The enrollment was in excess of a thousand. (And apart from the fact that I was forced to fail about three-quarters of the people who took the course for credit—a tragic comment on the level of imagination among even graduate and extension students these days—it was an unqualified success.) It was the largest, most elaborate mixed-media program of presentations ever attempted in the genre.

The gem of the ten evenings was the April 15th spectacular. As announced in the UCLA brochure:

> NEW WORLDS FOR SALE: BUILDING NOVELS BEFORE
> YOUR VERY EYES
>
> Where do ideas come from and how do they become realities? Prominent sf writers Robert Silverberg, Frank Herbert, Theodore Sturgeon and Thomas M. Disch will be handed on stage the basics of a new planet (its ecology, physical properties, weather, mass and gravity, place in its solar system), as postulated ahead of time by some of the field's most brilliant innovators including Poul Anderson, Hal Clement, Larry Niven and Frederik Pohl. Stories will be ''imagined'' on the spot—an opportunity to watch works being willed into existence.

That was the announcement. The reality of putting together that evening, however, was the work of five months of incredible effort by all the above-named writers, myself, and artist Frank Kelly Freas, with the sedulous assistance of my office staff, half a dozen young writers and students who donated their time, and artist-photographer William Rotsler.

Of all the presentations, this was the one closest to my heart, because it promised to demonstrate—out of a long-held annoyance at the way in which science fiction convention programming repeated the same old speakers-lined-up-behind-a-long-table seminars—that with only a little effort, ingenuity, and the cooperation of original thinkers, one could mount public presentations in a more dramatic and educational way.

Having attended many conventions and college programs over the years, I had sat through eternities of mind-clubbing sessions where even the most interesting topics were reduced to boring exchanges of vague generalities. For even the most wide-eyed attendee at such programs, there comes a moment when one admits precisely *no* interest in sitting through yet another cliché-festooned panel that rehashes the ho-hums of ''Sex in Science Fiction.''

Always the same panels: *New Directions in Sword and Sorcery*; ''Old Wave vs. New Wave''; *Which Future History is Likelier to Happen: Heinlein's or Asimov's?*; ''Women in SF''; *Crucifixion and Resurrection Symbolism in the Early Works of Robert E. Howard and Piers Anthony: Compare and Contrast*; ''Ed Earl Repp, A Searching Analysis''; that sort of thing. Paucity of invention, familiarity to the point of primal scream, sophomorism and provincialism, panel without end, amen.

The third evening of the series, born out of pique and hubris (a pair of unworthy attitudes guaranteed to cut down the most adept of us), was intended to demonstrate to those who program sf conventions that there is an infinitude of alternatives to the *pro forma* panels so slavishly mounted even today.

First Hal Clement discovered and named Medea, which everyone persisted in referring to as "Harlan's World" in much the same way as well-wishers in 1803 used the phrase "Fulton's Folly." Hal, or Harry Stubbs as we know him in his true persona, wrote extensive specs on the astrophysics and geology of Medea. Its star-system, its place in that galaxy.

Then Harry's specs were sent to Poul Anderson, who dealt with the primary planet and the major satellites, picking up where Harry's geological extrapolations ended. Further geology, meteorology, oceanography, geography, biology, and basic nomenclature—a very long, Anderson-brilliant essay—were added by Poul. Then I sent *that* combined batch of specs off to Larry Niven, who did his usual exhaustive job by tagging off the biological specs and going on to codify the ecology and xenology of Medea. He created the denizens of the planet. (The level of enthusiasm, by this time, was so high I was getting daily correspondence from the participants with "second thoughts." Some of those afterthoughts have been included here as part IV.)

Fred Pohl received the amalgamated packet last, and finished the xenological study, enriching it with observations on the possible sociology, theology, politics, and mathematics of the native Medeans.

The entire series of specs (part I) was mimeographed in booklet form (a handsome presentation item that I've seen sold at auction for over $100) and one copy went on each chair in the auditorium the night of the seminar. *But wait*, as they say in the tv ads for Ginsu knives, *there's more!*

Before the evening of the seminar the specs were sent to artist Kelly Freas. Kelly rendered a fanciful painting of the surface of the planet, the major satellites, the aliens and humans who had already made first contact. We took the painting—included as a fold-out in this edition—and had it photographed by William Rotsler as slides, in whole or in blowups of each section.

On April 15th, at dinner with Silverberg, Herbert, Disch and Sturgeon, I gave them their first look at the spec booklet, a mere two hours before they were to walk on stage. The dinner conversation—between hurried readings and the jamming of forkfuls of food into their ears and eyes because they were distracted and eating with one hand while holding the booklets—was exceptional. If I have one regret about this wonderful project, it is that I didn't have the foresight to suspect that the dinner conversation would be memorable. It was not taped, no record exists of that session, and I'm sorry I didn't think of it.

But the dinner conversation did not talk them empty. The evening's seminar was exceptional, as you will see when you get to part II. The first hour and a half—with Medea being flashed on the giant screen at the back of the stage—was spent in jackpotting . . . the writers sitting in comfortable easy chairs, throwing around the ideas contained in the specs, seeing where each other's wild surmises took them. As moderator, I played it safe and got out of the way.

Then we took a break, came back, and in the *next* hour and a half

Sturgeon, Disch, Silverberg and Herbert began plotting the stories they might write about such a world. (Part of the game of this book will be in your trying to find the germinal moments of scattergun thinking that eventually resulted in the stories actually written by these four.)

Then an hour was spent in Q&A with an audience that was dazzlingly alive and inventive. The electrical load in that auditorium, as a thousand individuals let their imaginations soar free, was a heady feeling. Many of those questions have been culled from the hundreds written and submitted, to form part III of this book. (Many others have been omitted, not because they were any less stimulating, but because for a large part of that Q&A session the audience got sidetracked into a complex, bewildering concatenation about the religion of the native Medeans. If you think suffering through the harangues of Falwell or Robertson or Swaggart on the religion channel is a term of servitude in the land of mental obfuscation, try surviving three-quarters of an hour while aficionados discuss the religious quirks of alien balloon creatures, spores, and fuxes.)

Fred Pohl, who was at that time an editor at Bantam Books, suggested there might be a publishable book in the evening, if the auspicious writers involved could actually be made to *write* those stories. As it was *precisely* what I'd had in mind, and had, in fact, announced to the audience, for to let all that effort lie fallow would have been a felony, I went forward with the transmogrification of an evening seminar into an icon that hundreds of thousands of readers could enjoy for years to come. The book, as conceived by Fred (who naturally insisted it be sold to Bantam) and me would include the original specs, the transcript of the evening seminar, as many of the best of the audience's questions as space would permit, and . . . stories by each of the participants, those in the booklet and those on the platform. Thus was born *Medea: Harlan's World*.

Historically speaking, there is almost no publishing precedent for this volume. Two previous anthologies in the field come to mind as conceptually similar, and honoring them is a matter of rectitude, as well as suggesting further reading for those of you who will be stimulated in the art of what if. In 1952 the late Fletcher Pratt, as advisory editor for Twayne Publishers, caused to be created a collection titled *The Petrified Planet*. Proceeding from specs that created the planet Uller, imagined by Dr. John D. Clark, novellas were written by Pratt, H. Beam Piper and Judith Merril. It remains a marvelous exercise, and some perspicacious publisher should bring it back into print.

For Pyramid paperbacks, in 1977, editor Roger Elwood put together a similar package under the title *A World Named Cleopatra*. The planet was created by one of our contributors, Poul Anderson, and the four stories placed on that planet were written by Anderson, Jack Dann, Michael Orgill and George Zebrowski. While the scope of the project was tighter than the

Pratt book or this effort, it was a lively demonstration of what sf writers can do when presented with a complex problem.

Caution should, however, temper our enthusiasm for the sort of project that postulates a single background for stories by a range of authors. It can be a stimulating, even uplifting exercise; but it *is* an exercise. A trick. A stunt, in the most positive and daring sense of that word. Contrariwise, if the restrictions of background are oppressive, they can stifle individual creativity.

Case in point: in 1967, a French critic named Michel Butor, spurred by Gallic illogic, proposed that all science fiction writers use a single, mutually-arrived-at background for *all* stories written in the genre. His now-infamous essay on the subject (''Science Fiction: The Crisis of Its Growth,'' can be found in Thomas D. Clareson's collection of monographs on sf, *SF: The Other Side of Realism*, from Bowling Green University Press) penultimately reads as follows:

> Now let us imagine that a certain number of authors, instead of describing at random and quite rapidly certain more or less interchangeable cities, were to take as the setting of their stories a single city, named and situated with some precision in space and in future time; that each author were to take into account the descriptions given by the others in order to introduce his own new ideas. This city would become a common possession to the same degree as an ancient city that has vanished; gradually, all readers would give its name to the city of their dreams and would model that city in its image.
>
> SF, if it could limit and unify itself, would be capable of acquiring over the individual imagination a constraining power comparable to that of any classical mythology. Soon *all* authors would be obliged to take this predicted city into account, readers would organize their actions in relation to its imminent existence, ultimately they would find themselves obliged to build it. Then SF would be veracious, to the very degree that it realized itself.

That this essay, and the wonky thinking behind it, were recognized instantly upon publication as arrant nonsense—the product of the kind of muddleheaded Utopianism that has, in the real world, created communities of surpassing repression—is due not so much to the ratiocinating powers of the sf community, both professional and fan, as to the cantankerous individuality of its members. I cannot see an Alfred Bester molding the particulars of the society brought vibrantly alive in *The Demolished Man* to the structure of, say, A. E. van Vogt's *World of Null-A*. Tell me that it isn't lunacy to expect Jack Vance to tailor the universe of his Demon Princes to Zenna Henderson's world of The People.

No, the pre-fab common setting is a once-in-a-while stunt, to be pulled off only by the best and the brightest. But if you doubt the validity of this warning, simply consider that even in these stories of Medea, with detailed specs bolted down for its eleven storytellers, there are discrepancies that will make purists howl.

None of us seemed able to get right the number of legs on a fux, for instance. Except maybe Larry Niven, who created them. (See his letter in part IV.)

When a fux begins life, does it have ten limbs — i.e., 8 legs and 2 arms? If so, then it has *two* female stages (with 8 legs, then 6 legs); one stage as a male (with 4 legs); and one stage as a neuter (with 2 legs).

But though all the authors, myself included, are in agreement that the biped stage is neuter, we cannot seem to agree about the other stages of a fux's life. Even Kelly Freas's illustrations offer conflicting evidence, though he sat there and noodled out everything visual from the git-go. Trying to determine who is "correct" in this, and similar matters passim the stories, is a fool's game. (Sub-ploy #1 of that game is trying to ascertain precisely the number of years it takes to get to Medea from Earth. One of our experts says 61 Earth-years; another insists it's only 50; a third waffles and says it's 51.)

When assembling the stories, and proofing them in readiness for delivery to the publisher, I had momentary thoughts of "neatening" everything. Of trying to get the authors to go back over their stories so there was a unity of thought, an obvious homogeneity in the consideration of the "facts." I thought it might be an acceptable idea to Butor-ize the mass of fictions here.

That thought lasted ten seconds; then sanity returned.

Not only do I admit to the contradictions in these yarns, I *champion* them! Huzzah for the words that put the lie to the preceding words of another author. Yippee for the weird, individual thinking that kept these people from slavishly knuckling under to another's imagination. Monsieur Butor and his ilk would put us in mental chains. They would tell us we can interpret the songs of the stars and the songs from the fairies at the bottom of our garden only as Big Brother deems fit.

This pugnacious attitude, assertions of dissimilarity and rugged individualism, is the most salutary part of the game this book plays. Because it proves, if any proof be needed, that only through the freewheeling imagination of the special dreamers do we find egress from the proscribed universe. As Pushkin said: "Better the illusions that exalt us than ten thousand truths."

And finally, before I turn these special dreamers loose on you, a word or two of *mea culpa*.

Between the seminar evening in 1975, and the signing of contracts for this book in 1977, and the writing of these stories through 1980, and now, there has been an unconscionable abyss of silence. That silence was solely the fault of the editor.

Though Silverberg, in 1975, on the verge of retirement from writing, said he would not be able to contribute a story, when he emerged (thank God) from his self-imposed absence from print, one of the first jobs he undertook was the writing of ''Waiting For the Earthquake.'' Though Bantam Books has never been less than enthusiastic and supportive of this project, with money and in the good offices of four editors—Fred Pohl, Sydny Weinberg, Karen Haas and Lou Aronica—even they grew to believe this icon would never be formed. Though intentions were never less than honest and concerned, the editor had an ongoing situation that prevented birth of *Medea* till now.

The patience and goodwill of the contributors has been the balm that permitted me to climb out from under troubles and get the job done. From Frederik Pohl, who chivvied and chewed on me, trying to help with scientific specifics that would aid me in writing my own story; to Jack Williamson, and Kate Wilhelm, who were brought on board as supernumeraries in expansion of the original contributors to the project (Jack as the writer a thousand participants voted into the cadre as the one they'd most like to see writing about Medea; and Kate because it became embarrassingly obvious that somehow an all-male view was being presented and, simply put, we needed input from the finest female writer in the genre), no one has been less than patient with me. I could not have written about Pogue and Virgil Oddum and what happened at the East Pole of Medea had it not been for Larry Niven and Bob Silverberg, who walked me through the terrain of hard science, holding my hand and correcting my perceptions of the physical universe.

In every sense of the word, *Medea* is a collaborative effort. We all built this planet, we all walked its surface, and when the times were hardest, my writer friends were there to help the fallen straw-boss.

There is blood and intellect in this book.

There is imagination and erudition.

And there is the song of friends at work.

We built it; now it's yours.

Welcome to Medea, my world, their world; and now, your world.

Harlan Ellison
29 April 1984

PART I:

THE SPECS

The following is a word-for-word reprint of the original booklet handed out to the participants and the audience on the evening of The Seminar, 15 April 1975.

CREATING A WORLD

MEDEA: Harlan's World

Précis of Specifications for an Imaginary Planet
Edited by:
HARLAN ELLISON
Created by (in order of contribution):

HAL CLEMENT
POUL ANDERSON
LARRY NIVEN
FREDERIK POHL

Prepared as source-material for the 15 April 1975 presentation, "New Worlds for Sale: Building Novels Before Your Very Eyes," the third seminar evening of

TEN TUESDAYS DOWN A RABBIT HOLE:

The World of Science Fiction

in conjunction with:

Department of Humanities
and Communications

Department of the Arts
UCLA Extension

The Editor wishes to thank the following persons, without whose hyperactive efforts this project could not have been brought to successful completion: Stephanie Bernstein, Alan Brennert, Arthur Byron Cover, Thomas M. Disch, Kelly Freas, Polly Freas, Susan Gotz, James Hartzell, Frank Herbert, Lori Horwitz, Gil Lamont, Lynn Lehrhaupt, Mark Lisson, William Rotsler, Ronnie Rubin, Robert Silverberg, Dorothy Simon, Linda Steele, Theodore Sturgeon, Marci Tarle, Bjo Trimble, John Trimble and Paul Turner. If I missed anyone, chalk it up to exhaustion and not lack of love.

Thank you all.

INTRODUCTION

A dream come true. For ten years I've tried to sell the idea of this evening to the committees that program science fiction conventions. To build a world, to build a series of interrelated stories *around* that world, to build a book containing those stories, in front of a live audience, for better or worse . . . to try and make an attempt at understanding what special creative linkages are formed in the very special minds of professional fantasists.

For ten years I was told by convention committees that it was too difficult, too many problems, too logistically fallible: couldn't be done. But tonight we are doing it! And you, who sit out there reading this, will see the act of creativity before your very eyes.

None of the credit goes to the Editor/Coordinator, only credit for being lunatic enough to think it could be done. Beyond that, nine of the most talented, most unpredictable, most innovative dreamers in the field of speculative fiction deserve *all* the credit. Under even the *best* of conditions, this would have been a monumental project; but the amount of time allotted to each of them to cobble up this world—that several of them, out of spite, insist on calling Harlan's World—without preparation, without warning, would be considered not only impossibly insufficient . . . but downright criminal had such rigors been laid on any other group of artists. In some cases they had only a matter of hours. For having put these extraordinarily talented people through such a wringer, I take full blame, and am ready to suffer the consequences. (Consequences I suspect will be hideous, Lovecraftian, given their massed talent for invention.)

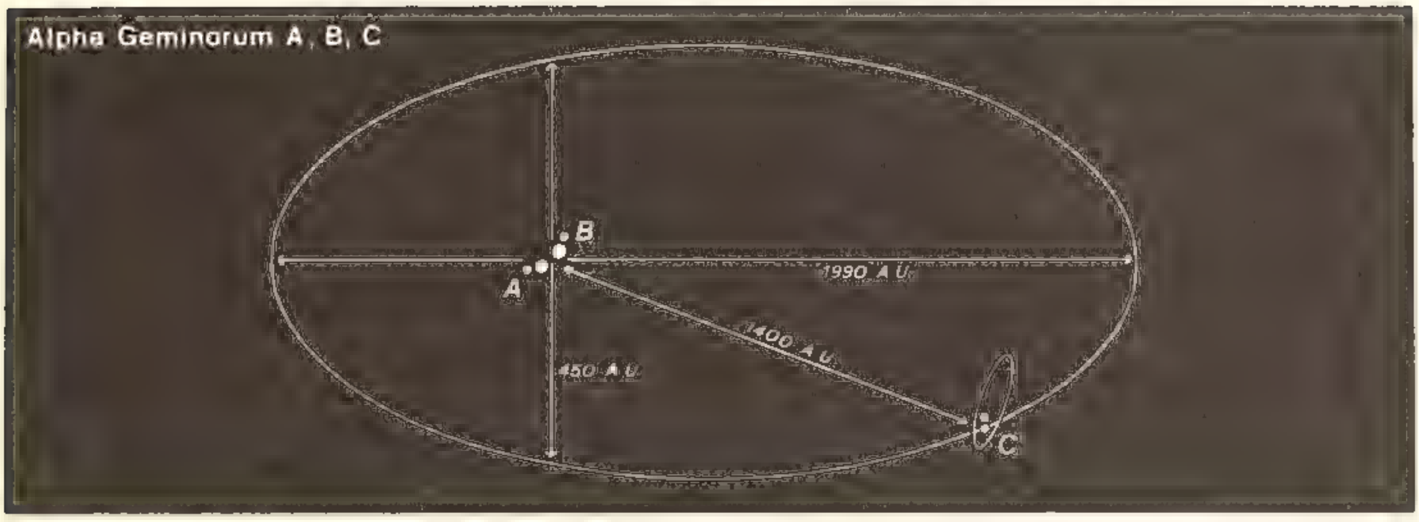
First Hal Clement, who discovered the planet, its star system, its place in the galaxy. Then Poul Anderson, who first went down to the planet Medea, and let us see it through his eyes, with wonder. Then Larry Niven, who peopled the world and painted in the smallest details. Then Fred Pohl, who cursed me mercilessly for having forgotten to tell him he was the clean-up batter, and then was himself hooked by the joys of creating Medea, who structured an entire civilization down to the religion and ethics and politics . . . all in a matter of days. And finally, the indefatigable Kelly

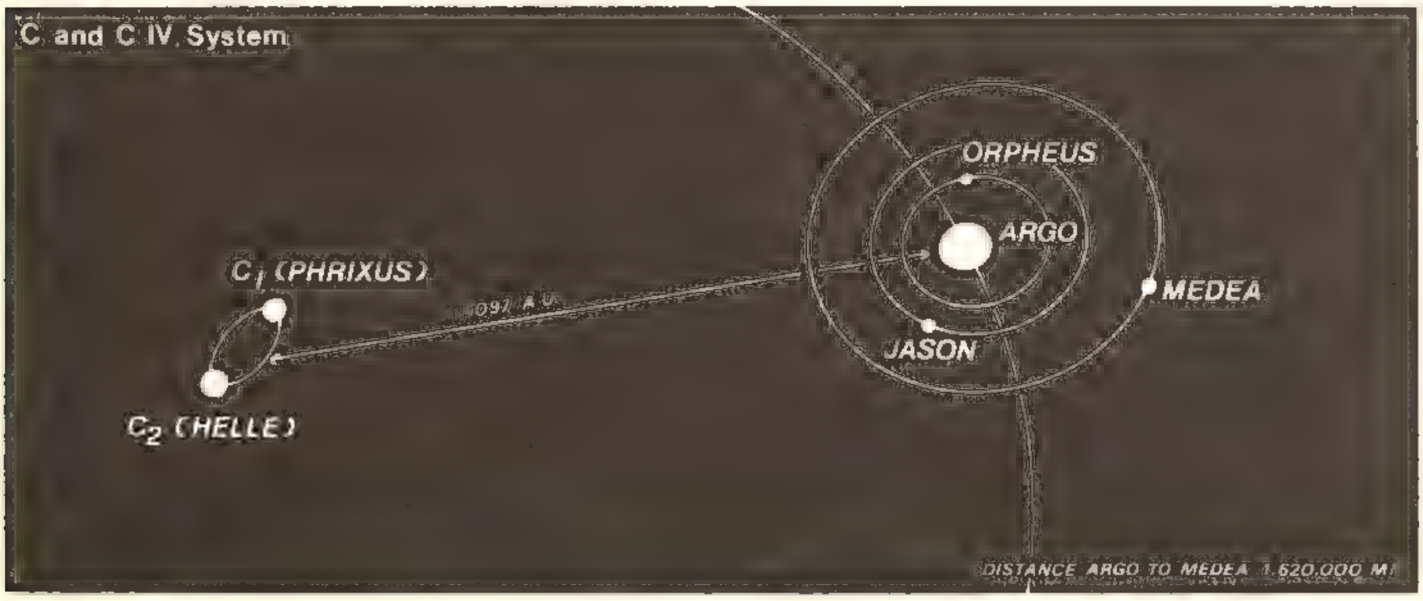
Freas, cover artist nonpareil and winner of more Hugos than a llama could tote without getting a hernia . . . who painted the world of Medea in something less than the time it took Michelangelo to do two coats on the Sistine Chapel ceiling. On the seventh day, they rested.

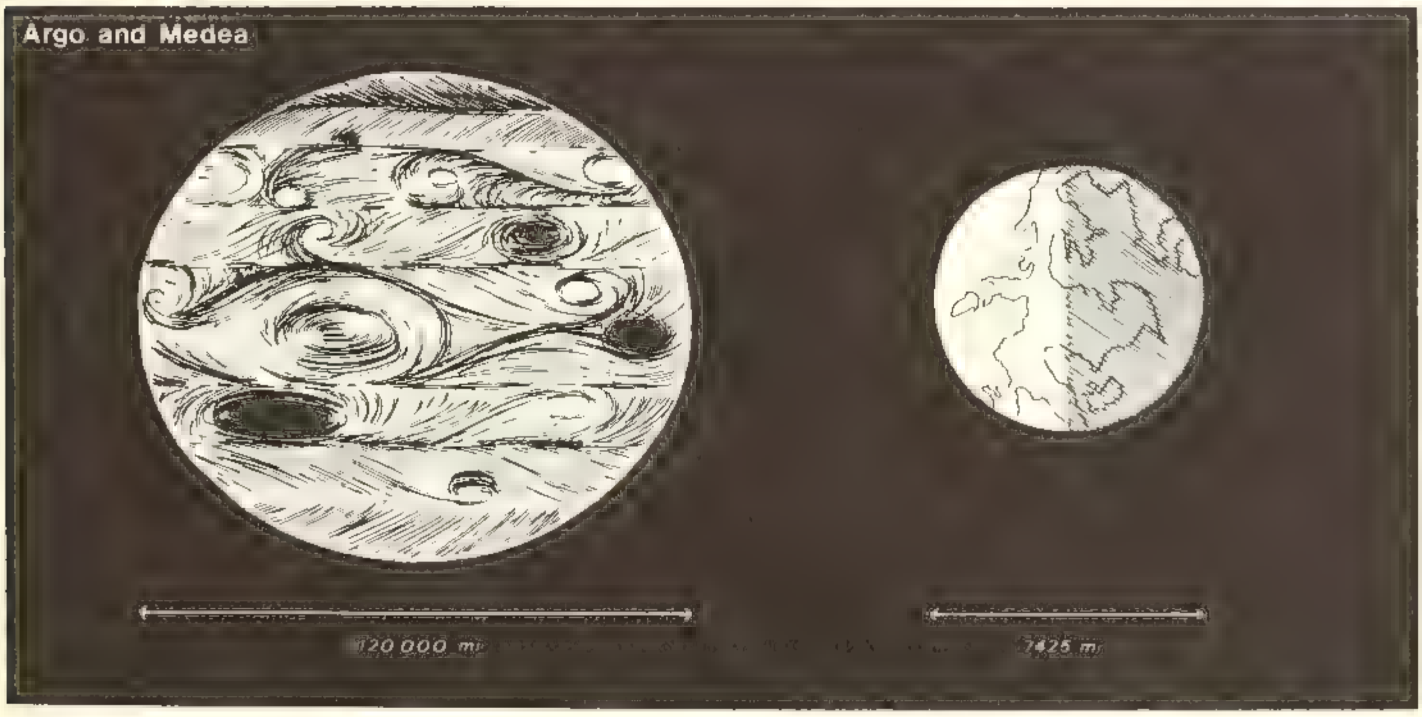
All this, so that tonight Tom Disch, Ted Sturgeon, Frank Herbert and Bob Silverberg could see the specs you now hold only an hour before *you* got them. And on the stage up there, they'll jackpot for an hour and a half, try to get a handle on Medea and what it would hold for Earthlings, and then they'll come back and tell you the yarns they would write that take place on a place like Medea.

This evening will be taped. Transcribed. Sold as a book. You will be able to hold this evening in your hands in years to come, to read again and again, and we give you this evening, these dreams, with the hope that the imagination demonstrated will teach you that no vision is too dangerous, no door locked that tight, no mind so narrow, that it cannot survive and challenge and triumph by sheer dint of *dreaming that dream*.

—Harlan Ellison
15 April 1975


Alpha Geminorum A, B, C
B
A
1990 A.U.
1400 A.U.
450 A.U.
C


C and C IV System
ORPHEUS
ARGO
MEDEA
JASON
C_1 (PHRIXUS)
1097 A.U.
C_2 (HELLE)
DISTANCE ARGO TO MEDEA 1,620,000 MI


Argo and Medea
120,000 mi
7425 mi

BASIC CONCEPTS: ASTROPHYSICS GEOLOGY

Hal Clement:

HARLAN'S WORLD

This world, Castor C IV (3), is physically similar to Earth. It is a Terrestrial-type (that is, high density) object consisting largely of silica and metal oxides, with hydrogen and other volatiles largely removed during its formation.

Its diameter is 7,425 miles (11,959 km, or 0.937 times that of Earth); its density averages 5.15 grams/cc, or 0.936 times that of Earth; and its surface gravity is 0.877 earths. Its atmosphere is somewhat more massive, with a total surface pressure 2.41 times Earth sea level normal. It has photosynthetic life, which has managed to reach CO_2/O_2 equilibrium at an oxygen partial pressure 1.22 times that of Earth and CO_2 slightly greater than our own world. There is a rather larger amount of total water, but much of this is in solid form.

It has a very extreme climate because of the astronomical situation. It is not a planet, technically; it is the third major satellite of a superjovian planet. That latter has 4.3 times the mass of Jupiter, and an effective surface temperature of 1440° Kelvin—it glows visibly red from its own heat, and has done so at a fairly steady level through the three quarters of a billion years of the system's existence. Harlan's World circles this primary at a distance of 1.01 million kilometers, in a period of 75.63 hours, with a locked rotation—that is, it keeps one hemisphere turned toward its red-hot primary.

The planetward hemisphere has a radiation equilibrium temperature at its center of 336°K (63°C or 145°F). Hence, there is violent thermal circulation of the atmosphere between the hot and cold hemispheres. Much of the water is trapped as ice on the cold side, with glaciers flowing slowly (but the speed varies with seasons) back toward the hotter regions.

The superjovian is Planet IV of Castor C, the faintest of the three visible (to a good telescope) stars in the Castor (Alpha Geminorum) system.

Like the other two, C is a binary, and is known in considerable detail to Earthly astronomers because its orbit is nearly edge-on to us and the two stars therefore eclipse each other. They are Mle main-sequence dwarves, with a total luminosity about 9% that of Sol.

Planet IV circles them at a mean distance of 1.097 astronomical units (1.645×10^8 km) in a period of 383 Earth days. At this distance the stars alone would warm Harlan's World to a temperature of about 158°K (-115°C); this is the equilibrium temperature on the hemisphere *away* from the primary when the planet is between IV and the suns. When the suns are shining on the other side, they raise its temperature by about 16°, to 352°K (79°C or 174°F). The total temperature range on the planet is therefore about 195°C, or about 350 Fahrenheit.

Seasons result from a 6° tilt of the world's axis perpendicular to the plane of its orbit, so that the primary seems to drift alternately 6° north and south of its mean position in the sky, in a period of 75.63 hours.

Its orbit in turn is inclined 21° to that of its primary around Castor C, producing arctic and antarctic circles comparable to those of Earth 19° from poles and equator (angles don't add because tilts aren't in the same direction).

There are regions near the poles, therefore, which get no input radiation from the suns at all during approximately half the 383 day year, though portions of these regions have continuous heating from the primary planet and other portions—toward the cold side—have intermittent (a day and a half on, a day and a half off) irradiation from this source.

Normally, the suns are about one-eleventh as bright as Sol (about one-twelfth, as seen from Harlan's World). Both could be viewed without too much discomfort with the naked human eye, but there would be risk of infrared retinal burns if it were done for too long. The stars have emission lines in their spectra, suggesting strong prominence activity; this might not show during the daytime, but might make a spectacular display before sunrise and after sunset if the atmosphere did not interfere too greatly.

Both suns are also flare stars, with small areas of their surface suddenly growing very much hotter and multiplying the brightness of the whole body by several times. These phenomena last, like our own solar flares, perhaps half an hour; like them, they occur at very irregular intervals—days to months; like them, these flares presumably emit heavy particle radiation.

Castor A and B, the principal suns of the system, would be visible in full daylight. I am assuming that C's orbit around these two varies in radius vector from 450 to 1990 A.U., with the present separation 1400 A.U. and increasing (orbital motion is too slow for this to have been determined yet; with these figures, the period would be 14,320 years). At the present assumed separation (rather greater than the minimum possible, going by their apparent separation seen from Earth), Castor A would have an apparent brightness of -9.5 mag, about one-tenth as bright as full moon on Earth;

Castor B is about half as bright as A. Neither would affect the temperature of our planet, even at their closest.

C's orbit around the AB pair is in a plane nearly at right angles to the principal planes of its own planets. At the moment, Castor A and B are within 20° of the celestial north pole of Harlan's World, and for several millenia they will be invisible from most of the southern hemisphere.

GEOLOGY
METEOROLOGY
OCEANOGRAPHY
GEOGRAPHY
NOMENCLATURE
BIOLOGY

Poul Anderson

Primary Planet

This is the red-hot superjovian around which Harlan's World orbits. While Hal has given us its mass, he has not specified its size. I believe this will not be in cube root proportion, since the density should be higher due to self-compression. Hence I'll guess the visual diameter as being about 1.5 Jupiter's.

In that case, its angular diameter as seen from Harlan's World is about 40′, or a third again as wide as Luna or Sol seen from Earth. It is a spectacular sight in the sky of the inward hemisphere. On the plausible assumption that the more massive a body, the faster it is likely to rotate, I think it would be quite oblate, its disc flattened enough for the naked eye to notice. It will scarcely present a blank dull-red face. Rather, it shows broad bands in different shades of red, spots which are vortices, darker streaks which are transient storms. Other colors are subtly and variously blended in. Everything changes as the planet spins (in a period I guess as being about 5 hours, or slightly longer as seen from Harlan's World), or as conditions upon it shift. Often the double shadow of a moon (double because the sun, Castor C, is) can be seen crossing Superjupiter's face, though only dimly.

Occasionally Superjupiter eclipses the suns. However, since it shines in its own right and the suns are weak, this is less spectacular, relatively, than a total solar eclipse on Earth. Besides its coal-like glow, the great planet exhibits discernible phases due to its changing position in the sky with respect to the suns.

At night or during an eclipse, when it is the principal luminary for the inner hemisphere of Harlan's World, it gives a very dull light, hard to see by. But this illumination gets aid from whatever other moons it has that happen to be nearby at the time, from the stars, and from a considerable sky glow. Altogether, the light is enough for a man to find his way by.

I don't know how many moons Superjupiter has altogether, but feel sure there is a goodly number, such as 15 or 20. Of course, most are tiny and/or distant. Yet three or four should be big enough and near enough to HW to show visible albeit small discs. Their apparent sizes vary according to their changing distances, and they have phases of their own. The illuminated portions are wan and reddish, unless one or two of them have atmospheres, ice coverings, or the like.

The stars mostly form constellations strange to Earth. A few images may be recognizable if you look hard, but the orientation of orbits and rotational axes helps disguise this.

As for the sky glow: Although the twin suns are feeble, Superjupiter must have one billy hell of a set of radiation belts. In fact, the magnetic field of Harlan's World being weak, we had better presume it is closer to its primary than the inner Van Allen of the latter. (This could be, as far as I know. The primary being more massive than Jupiter, its force fields are presumably deployed on a still grander scale.) Some leakage from the belt will nevertheless create a permanent aurora, stronger than Earth's. Occasionally there will be spectacular rays and curtains of light, especially when a sun flares. Perhaps human explorers would do best to approach and depart from Harlan's World along a more or less north-south line. And perhaps their electronic gear will be hampered by the immense radio emissions from Superjupiter.

The components of the double sun naturally revolve around each other, changing their configuration with respect to the fixed stars. Either one, as seen from Harlan's World, appears about half as wide as Sol seen from Earth. While they and Superjupiter (or they alone, when they shine on the outer hemisphere of HW) don't give much light by terrestrial standards, it serves for a human to get around by, and even read by if he doesn't keep at that too long. However, to gauge distances and contours, in reddish twilight where shadows are never sharp, is difficult.

Stars should always be visible by day in clear weather at sufficient celestial distances from the luminaries, e.g., near the horizon. The sky of Harlan's World is purplish rather than blue, though with the same infinity of shadings, colors, and variations that Earth's has.

Major Satellites

Permanently turning the same face toward Superjupiter, Harlan's World has, I suspect, been pulled into a slightly ovoidal shape, the point toward the primary. This would not be noticeable to an unaided eye looking from space, but is enough to be important to its development.

Since it is a bit less massive than Earth, and definitely spins less rapidly, I think it has considerably less magnetic field. (This may perhaps be somewhat counteracted by its lesser age: less radioactivity expended, hence more internal heat. But that's a whole separate can of worms. Because radiation of heat to space is a slow process, while radioactive energy release is cumulative, maybe planets get hotter inside as they grow older, up to a point which lies enormously far in the future. On the other hand, if the Castorian system is as young as Hal says, maybe it contains more radioactives than the Solar System ever did. On the third hand, I don't like that small an age for it, as we shall see. On the fourth hand, how important is radioactivity compared to gravitational energy release? Et cetera, et cetera. So, *ceteris paribus*, which is about the only reasonable assumption to make under these circumstances, I'll assume Harlan's World has quite a weak magnetic field.) This means it can less well fend off whatever charged particles come in, whether these be ordinary cosmic rays, spit-off from Superjupiter's Van Allen belts, or emissions when a sun flares. To a certain extent, the atmosphere, denser than Earth's, acts as a shield. But on the whole, I think the background count must occasionally go higher on Harlan's World than anywhere in terrestrial nature—though less high than terrestrial man has been known to make it at chosen spots on his planet.

Because its double sun is a pair of red dwarfs, Harlan's World gets far less ultraviolet light than Earth does. Therefore it has much less of an ozone layer, perhaps hardly any. That in turn leaves the lower altitudes exposed to primary and secondary ultraviolet when a sun flares.

We are told that the atmosphere is considerably denser than ours. This means that a given amount of energy input has proportionately more mass to move, which means that winds, or circulation generally, will be comparatively slow. The low rotation rate of Harlan's World reinforces that, by making less cyclone-breeding Coriolis force. Opposing these tendencies, theoretically the planetary wind pump should work more strongly than our own, because of the huge temperature differences between hemispheres. In fact, on the basis of a very rough calculation I make its thermodynamic efficiency about 25% greater than that of the terrestrial machine. And the temperature differential may be even larger than Hal figures, since there will be little if any greenhouse effect on the outer hemisphere (where not only water vapor but carbon dioxide is frozen).

Taking this factor against that, and without access to a computer—not that anybody now alive could write a really worthwhile program for the problem—I guess the following as being a reasonable meteorological pattern.

The two hemispheres, inner and outer, have radically different circulations. Coupling between them is less at a twilight zone than at the poles of rotation and, probably more importantly, through stratospheric jetstreams.

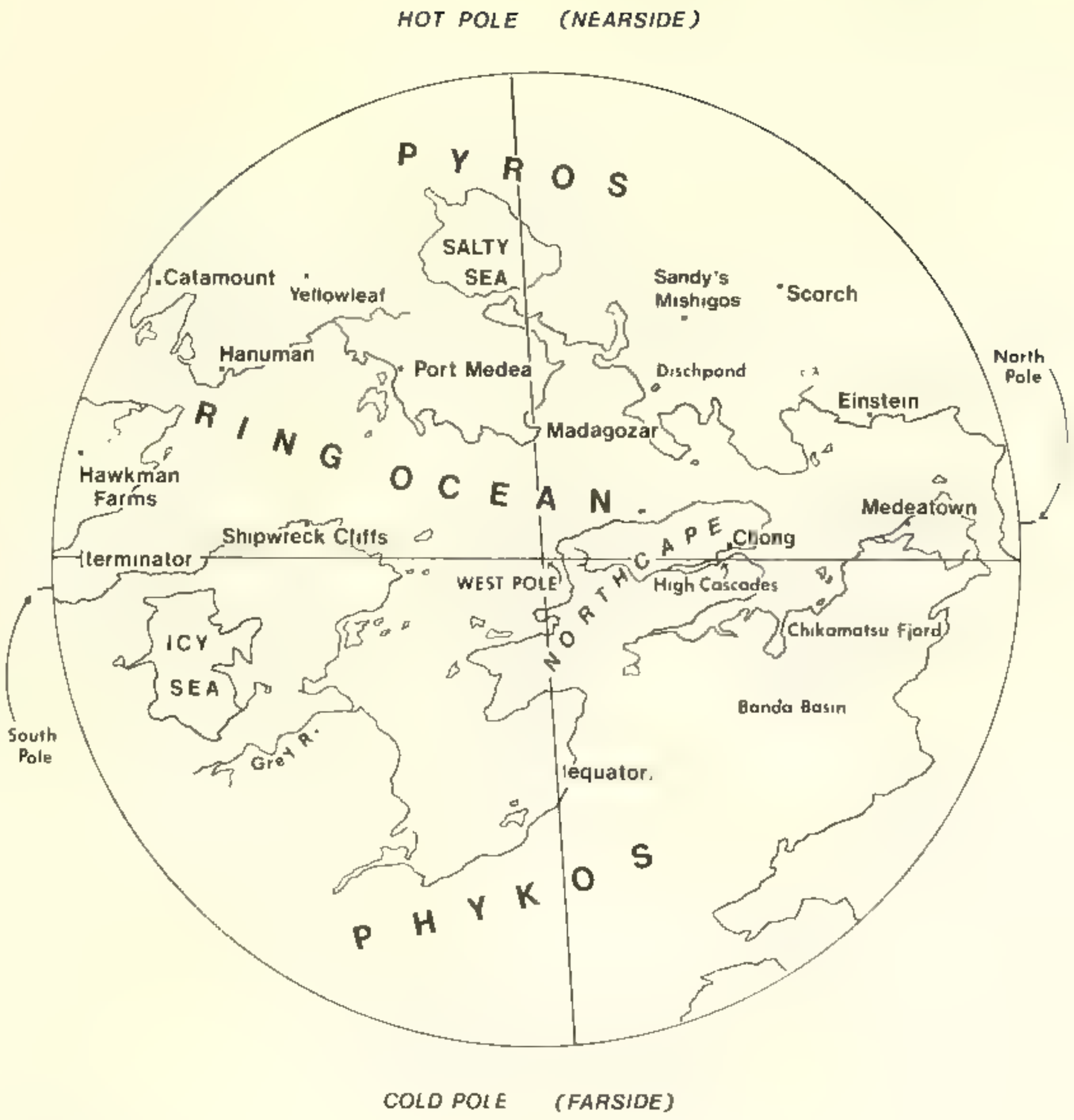
On the outer, cold hemisphere, air moves very sluggishly. There are winds every now and then, but slight and short-lived. Precipitation, whether rain, snow, hail, sleet, or dew, occurs mainly along the Ring Ocean (*vide infra*), or in the arctic and antarctic zones as seasons change. (Remember, though, because of the slight axial tilt and the feeble suns, seasons are far less marked on Harlan's World than on Earth.) Chiefly this far side is a waste of glaciers. However, these do not reach to the cold pole, which is in fact a region of bare ground. Water vapor and carbon dioxide froze out before getting that far, in early days. They still do, insofar as interhemispheric exchange continues.

Correspondingly, the heat pole is dry. Besides the rate of evaporation to be expected at its mean temperature—somewhat above the peak ever recorded on Earth's most torrid spot—there is the fact that this general area lies at a high altitude, because of the measurably ovoidal shape of the world. Thus rainfall, when it occurred in a cooler era, tended to run off, leaving leached-out minerals behind to make the soil salty. Nowadays, when conditions have mostly stabilized, rain hardly ever falls here.

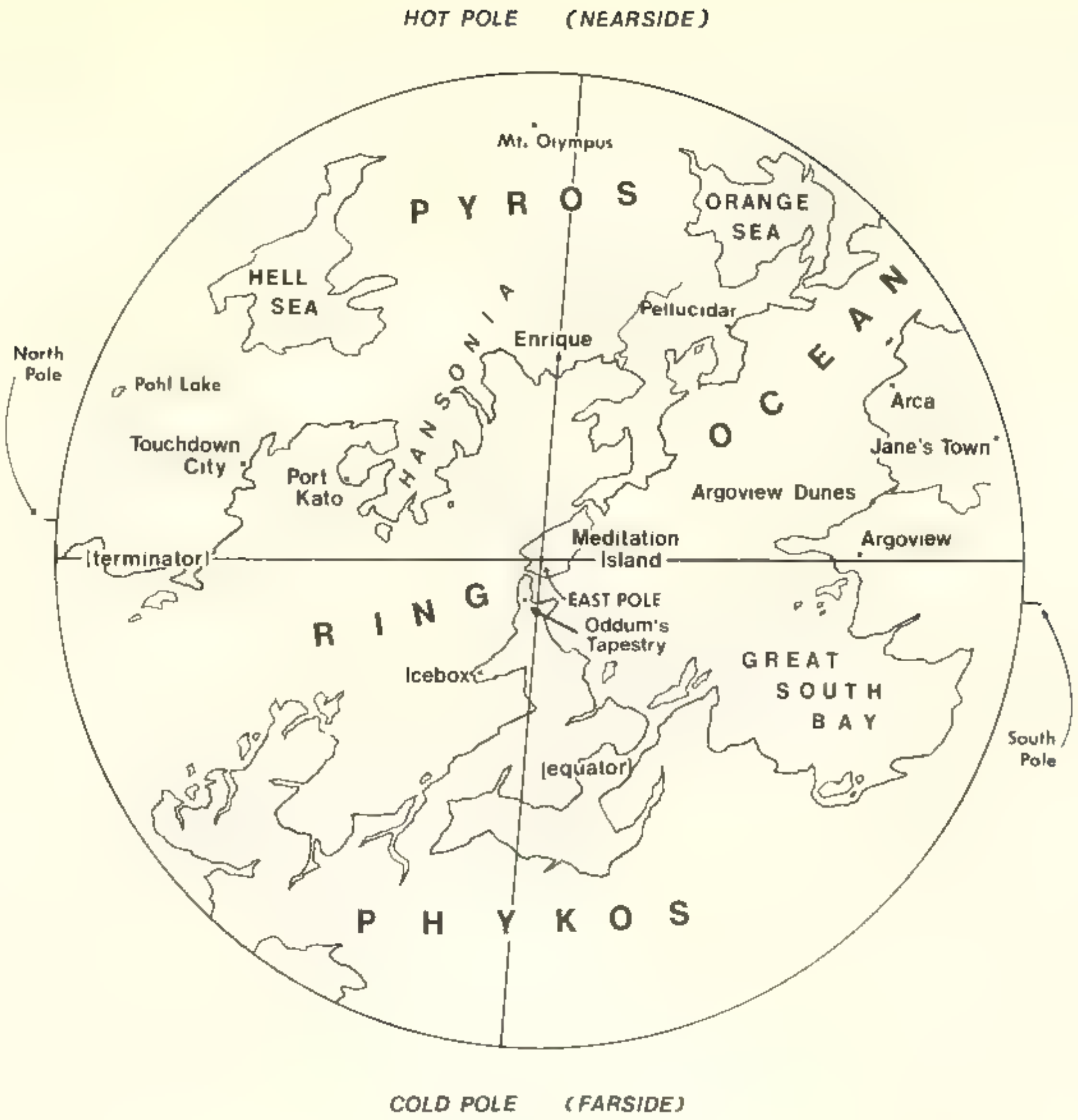
Thus we have a searingly hot desert—perhaps beginning to be invaded by specially adapted life—directly under Superjupiter. It is surrounded by ring-shaped ocean, whose shores are in this inner hemisphere on one side, in the outer hemisphere on the other side. These two littorals are the heartlands of two quite different ecologies, while the waters themselves harbor abundant marine life.

The heat and cold poles are quiet and barren, with rare storms. The Ring Ocean knows every changeable and violent weather, especially toward the poles of rotation, i.e. arctic and antarctic zones. In winter, vast ice masses form around these polar territories; in summer they break up, and along the outer hemisphere side, icebergs may float as far as the equator.

The tides in the Ring Ocean and lesser seas are small by terrestrial standards. (Superjupiter, being nearly fixed in place, doesn't stir them much—although there is some effect as the giant planet moves through its narrow arc of sky, and this heightens seasonal changes during the year. There is no Luna. The suns combined are less massive than Sol. Companion moons are negligible.) Tides do occur, indeed in more complex patterns than Earth's, but are far less marked. Likewise (again because of the slight Coriolis force) are ocean currents. Hence we find numerous Sargasso-like areas in the waters. More importantly, the climatic differences between the


HOT POLE (NEARSIDE)
P Y R O S
SALTY SEA
Catamount
Yellowleaf
Sandy's Mishigos
Scorch
Hanuman
Port Medea
Dischpond
Einstein
North Pole
R I N G O C E A N
Madagozar
Hawkman Farms
Medeatown
Shipwreck Cliffs
NORTH CAPE
Chong
terminator
WEST POLE
High Cascades
ICY SEA
Chikamatsu Fjord
South Pole
Banda Basin
Grey R.
equator
P H Y K O S
COLD POLE (FARSIDE)
0 1000 2000 mi
0 1500 3000 km

MEDEA:
HARLAN'S WORLD
(western hemisphere)


HOT POLE (NEARSIDE)
Mt. Olympus
P Y R O S
ORANGE SEA
HELL SEA
Pellucidar
Enrique
HANSONIA
North Pole
Pohl Lake
Arca
Touchdown City
Port Kato
O C E A N
Jane's Town
Argoview Dunes
Meditation Island
Argoview
terminator
R I N G
EAST POLE
Oddum's Tapestry
Icebox
GREAT SOUTH BAY
South Pole
equator
P H Y K O S
COLD POLE (FARSIDE)

MEDEA:
HARLAN'S WORLD
(eastern hemisphere)

inner and outer boundaries of the Ring Ocean are even larger than we would otherwise expect.

On the inner shores, climate ranges from warm and wet in the tropics to variable in the polar zones; these latter could perhaps be called Mediterranean with occasional icebergs. On the outer shores, i.e. those which never see Superjupiter but depend on the double sun for all their light and warmth, it ranges from cool and wet in the tropics to chill in summer and really cold in winter in the polar zones. Let's bear in mind, though, that these are gross generalizations. Topography, currents, or whatever will enormously influence localities. Thus, here at home the mild English climate is in the same latitude as Labrador.

But to recapitulate in the broadest possible terms: The heat pole is a blazing highland desert. From it, land on every side slopes gradually downward, becoming more moderate in climate as it does although always unduly warm by terrestrial standards, until at last it reaches an ocean which girdles this entire large continent. (Of course, before then a traveler will have encountered inland seas, lakes, rivers, etc.) Many parts of that ocean reach somewhat past the hemispheric boundary, beyond which Superjupiter is never seen. On its inner shores, climates tend—with many local exceptions—to be warm and damp in the tropics, cool and variable toward the poles of rotation. On the outer shores, climates—again, with countless exceptions—tend to be cool and wet in the tropics, cool in summer and bitterly cold in winter in higher latitudes. Icebergs may be encountered clear to the equator in these sections of the ocean. The boundary land and sea between the hemispheres is the belt of really stormy weather, especially in the inner parts. (Otherwise, exchange of matter and energy between hemispheres is slow.) Beyond the outer shores, Harlan's World gets steadily colder as the traveler fares, until he enters a vast waste of glaciers. This surrounds a completely bare region, at the middle of which is the cold pole. Here the air is usually quiet. Here, too, humans can't breathe without artificial help. Not only would a direct inhalation freeze their tissues, there is no gaseous carbon dioxide to stimulate the breathing reflex.

On some islands in the Ring Ocean or in nooks tucked into its shores, doubtless exist little regions which men find congenial, once they have adapted to the different atmosphere.

Life

Just a few remarks about this; I'll leave the details to others.

If the system is a mere three quarters of a billion years old, as Hal says, I wonder if life will have had time to appear at all. And I see no reason why the system must be this young. Indeed, red dwarf stars are so long-lived that the Castorian System could be tremendously older than ours. (If so, it might be poorer in the heavier elements than we are. However, more factors than age are involved here, so we can let that issue pass.) Given the low irradiation, it might well need longer than Earth did for life to appear and to evolve complex organisms. This is why I'd prefer it to be older than Hal proposes.

Oh, well, we really know very little for sure. Maybe things really can happen faster on Harlan's World than they did on Earth. Therefore, I can drop this argument and assume for present purposes that there was biopoesis and that this did lead to photosynthesizing species. I must assume this, simply because of knowing no other way to have the amount of free oxygen in the air that Hal postulates. Presumably the origin of life was in the seas. Presumably the energy to drive the evolution came from the suns, Superjupiter, and to a lesser extent radioactivity, cosmic rays, etc. Since I suspect that on Earth itself, hard radiation has been far less important as a mutagen than simple thermal quantum-shuffling, I can go along with the idea of life appearing and evolving faster—up to a point—in the inner parts of the Ring Ocean and along those shores, than was the case on our own planet.

Incidentally, a plant in its lifetime (at least on Earth) liberates no more oxygen than its decay or combustion consumes after it is dead. The gas we breathe is thanks to plants which did not rot or burn after they died but went on to form peat, coal, and the like. I presume this is the basis of Ted Sturgeon's anxiety about our present rate of use of fossil fuels. To have the amount of free oxygen that Hal gives to Harlan's World, we need to have had a huge amount of photosynthesizing life which died but whose tissues were not then destroyed. Perhaps much of this was in the form of plankton and seaweed in the inner parts of the Ring Ocean, which sank into the ooze of the bottom. The weak tides may have helped that process along, by allowing the formation of many Sargasso regions. So may the great temperature differentials, by causing vertical circulation in the water that brought up abundant minerals from below to the surface where plants could use them.

In general, I suggest that native life on Harlan's World is primitive. If somebody wishes to dispute this, I won't quarrel. But for the time being, I picture a roughly Cambrian situation. The Ring Ocean and lesser bodies of water swarm with life, including greater areas of floating weeds (toward or in the inner hemisphere) than we know on Earth. The inner shores have been invaded by plants and early-type animals, which are slowly developing species suited to the fiercer conditions elsewhere; but the heat pole area is still barren, except perhaps for specialized bacteria, alga analogues, that kind of thing.

Given the dense atmosphere—and its slightly lower than terrestrial gradient, because of the lower gravity—I can see aerial life evolving early and going further than on Earth: starting with windborne spores but continuing to winged creatures, kite-like plants in search of a place to take root, and living balloons such as some science fiction stories have depicted. Extremely and unpredictably variable weather around and above the Ring Ocean will have stimulated evolution in this direction; when conditions can change fast, it is well for survival's sake to be able to get out in a hurry.

Thus I can imagine the sky of Harlan's World holding a larger variety of species than ours does; and Lord knows, even in the present ecologically impoverished day, we've got plenty.

This would influence the biology of the outer, cold hemisphere. Essentially the sole energy input it gets is from the double sun, not only far less than Sol's to Earth in absolute amount, but proportionately less in ultraviolet (though the thin ozone layer may partially compensate for that). Thus I suppose its life is derived from and, at the current stage of evolution, dependent on the life that appeared earliest in its antipodes. An analogy is in our own dead seas. The ecology of the far side of Harlan's World is quite saprophytic, drawing on airborne organisms which get carried here and perish. However, this isn't nearly as absolute as in the case of terrestrial benthic regions. After all, the cold hemisphere does see the suns. Interaction between the scavenger kind of life and the slowly developing self-energizing kind must be fascinating.

I would guess that, just like the heat pole, the cold pole does not yet have any macroscopic life.

All the foregoing is predicated on the assumption that biochemistry on Harlan's World has the same basis as on Earth, i.e. proteins in water solution. I'd bet that it does, if only because here at home no other sorts are on hand. Something must have prevented them from appearing. Since Harlan's World also possesses liquid water, I'd expect biochemical evolution to follow the same general lines. Of course, endless variations are conceivable, starting with the possibility of life there basing itself on dextro amino acids and/or levo sugars where ours does the opposite. Be this as it may, I would certainly not expect to get a nourishing meal off any plant or animal on Harlan's World; at best it might supply calories to keep me going for a while, and at likelier worst it would poison me.

By the same token, though, it is most unlikely that we could catch any disease native to this globe, or be appetizing to any predators it has—though, as indicated above, I doubt if there are any predators of a size worth worrying about.

As said, to provide the oxygen there must be something we might as well call a vegetable kingdom. It could be mostly pelagic; how much of it is on land may depend largely on how much the storyteller needs for his purposes. On Earth, plankton maintains roughly half the oxygen. On Harlan's World, for reasons already given, I suspect the equivalent of plankton will supply a larger proportion. Indeed, the seas may, by our standards, look awfully scummy—but we'd better not try to purify them! I'm pretty sure that, whether on land or water, plants will *not* be green. Besides the fact that the chlorophyl molecule is unlikely to be duplicated exactly, there is the fact that a yellow or orange color can better absorb energy, given the kind of light which shines upon Harlan's World.

Nomenclature

The star is Castor, evidently actually a trio of double stars, A, B, and C in astronomical parlance, with C being the sun of what I called Superjupiter earlier. Now Castor and Pollux are, of course, the heavenly twins of Classical myth; hence, stories about them.

We can leave Pollux out of consideration; it's a different thing entirely—not even near Castor in space. The three components, A, B, and C, could very well be given the names of regions where the mythical Castor was active. The Twins were especially revered in Rome and Sparta, so we can give these names to A and B, which would be fairly conspicuous in the sky of Harlan's World. Or to avoid confusion, you might call them Roma and Lacedaemon. In fact, instead of ''Rome'' or ''Roma'' you could use ''Regillus,'' since it was at a lake of that name that the Twins were supposed to have appeared and led the hard-pressed Romans to victory.

C, the sun of the actual system we are using, can logically be called ''Colchis,'' because the Twins were part of the company of Argonauts. Its two members can be called ''Phrixus'' and ''Helle'' (two syllables), the brother and sister who carried the Golden Fleece to that country at the far end of the Black Sea. (Rather, as you no doubt recall, Helle was drowned en route, in waters that were since called the Hellespont.) Since they would scarcely be absolutely identical, and Hal says a human can look at them bare-eyed, people would want a name for each member as well as for the pair considered as a whole.

Planets of Colchis can then be given names of characters associated with the legendary history of that land or with the Golden Fleece in general, e.g., Athamas, Nephele, Ino, Cadmus, Aeëtes.

But Superjupiter itself we'll give the name ''Argo''. Then its moons can be named for the Argonauts themselves, i.e. Jason, Zetes, Herakles, Orpheus, Meleager, Theseus, etc. I doubt you will have much if any occasion to mention them; still, I've always found that there is no such thing as too much background information when constructing an imaginary system.

''Argo'' is not only simple and logical within the context, it has the kind of strong, masculine sound which associates well with so huge a planet.

Similarly, I like the idea of calling Harlan's World ''Medea.'' True, she wasn't actually an Argonaut; but she sailed home with them, as you recall. She was beautiful (and HW must have many beauties, albeit probably rather stark), mysterious, changeable (the extreme variations between heat and cold poles), sometimes calm and rational (the quiet airs around those poles), sometimes violent (the stormy zone along the Ring Ocean). Furthermore, Medea is itself euphonious and easy to remember.

Thus: in the sky are a couple of bright, reddish companion suns, Roma (or Regillus) and Sparta (or Lacedaemon). The sun of this system is Colchis; if you want to specify either of the two components, you'll say Phrixus or Helle. Planets have names like Athamas, Cadmus, etc. The huge Superjupiter is called Argo. Its moons have the names of Argonauts, such as Jason and Orpheus—except for the most interesting one, which is called Medea.

If Medea has natives, they'll obviously bestow their own place names around the surface. Whether there are natives or not, humans will do likewise, I'm sure. I doubt very much that they would fussily try to carry on the Classical nomenclature bestowed on the system by the first scientists who went there (or maybe by a committee of scholars back on Earth). It simply isn't practical. I'd expect a jumble of place names on the surface, each one due to some accident of history or whim of a discoverer or whatever.

If you wish to abide by my idea of the Ring Ocean, then that looks like a reasonable name for it. Lesser seas could acquire names like the Salty, the Purple (it's deep and nearly sterile, like Lake Baikal on Earth; but the illumination on it is red), the Hell Sea (near the heat pole), the Orange (covered especially thickly with alga-like vegetation and scum, whose color would not be green, as indicated before), and the Icy (on the far hemisphere, beyond the Ring Ocean; it's near enough to the border that it isn't entirely frozen in summer). In like manner, some rivers and lakes could get their names from their characteristics, such as the Swift and the Gray (because of glacial flour) or Placid and . . . yes, how about Argorise, because seen from there the giant planet is just on the horizon, occasionally going a bit higher as Medea librates?

The large continent which occupies most of the inner hemisphere might well have gotten a Classical name early on, and in that case I'd suggest Pyros (Greek for "fire," you know). On the far hemisphere you don't really get noticeable continents or islands much past the zone boundary, because seas are frozen solid.

Maybe, more prosaically, people would just refer to the hemispheres as Nearside and Farside.

Localities would often draw their names from individual pioneers, e.g., Smith's Land, or from incidents which happened there, e.g., Shipwreck, or from characteristics, e.g., Scorch. Often they would be quite arbitrary, e.g., Einstein, Hanuman, Jane's Town.

Concluding Remarks

What would men be doing here? Aside from a very few freakish spots which they may find pleasant—and it's a lot easier to stay home, isn't it?—I can't see anything material to attract them. Minerals are more readily available elsewhere, e.g., on asteroids where one needn't worry about storms or toxins. To be sure, local bioproducts (spices, furs, drugs, etc.) may be cheaper to obtain here than to manufacture on Earth. But it seems improbable.

However, there is one thing which Harlan's World—Medea—like any world, offers in superabundance: knowledge. Considering its many uniquenesses, people would be foolish if they failed to establish a permanent colony of scientists here—as foolish as we Americans today are in turning our faces away from the universe.

BIOLOGY
ECOLOGY
XENOLOGY

Larry Niven

Life Forms of Medea

First, to my major point of disagreement with Poul.

I don't know why Hal assumed only 750,000,000 years for the lifespan of the system. For all of me, it could be older. Poul claims it *must* be older, or Medean life would not have developed any interesting complexity. When Earth was that old, it had not developed photosynthetic life.

I disagree. Medean life doesn't have to be old; but if it isn't, it has to be *fast*.

(1) We presume that Medea's atmosphere and oceans formed the usual complement of organic molecules, via lightning and cosmic ray impingement on a reducing atmosphere. Earth and Medea start even, then, with soupy oceans and organic molecules linking at random until something self-replicating forms. Flares in the suns provide enough of a spur to mutation. Life runs out of natural organics and starts preying on each other.

(2) A photosynthetic life form develops. We don't know what chemical is involved, except that (unlike chlorophyl) it absorbs and uses redder light than Sol's. We'll say that happened sooner than it did on Earth: a quarter of a billion years ago.

(3) Results were a disaster for the prevalent life forms, as they were on Earth. Some reducing-atmosphere life survived (as they did here: tetanus and gangrene, f'rinstance).

But now Medea gains a lead on Earth. Medea's environments show more variety. Spillover from local pools of development provide more competition. Medea is more geologically active (I'll get back to that) and the wild weather carries spores farther (and, later, seeds and birds). Complex life develops faster.

Also, a heavier atmosphere means more oxygen in solution in the sea. Sea life is more active.

(4) Lower gravity, plus more oxygen in the heavier air, means life can crawl out onto the land sooner. Medea's life is now developing *far* faster.

Living far faster, too. A longer life for individuals is definitely not the first consideration in evolution here. The first consideration is to get enough food to burn off the extra oxygen. Second is lots of progeny.

We see plants growing almost visibly. Animals move at a blur. By the time terrestrial spacecraft arrive, Medean life is complex, perhaps complex enough to have provided an intelligent species; perhaps more than one, in very different environments where they developed separately.

(5) Airborne forms proliferate. They wouldn't have to burn energy much faster than the runners, who have to burn their food as fast as they can to catch more food, or to run from the catchers, depending.

Taking to the air gave Earthly forms a breather, a temporary haven from predators. Result: elaborate mating rituals, great variety, and ''sexual flesh,'' i.e. high coloring in specific patterns to attract mates; all of these are inefficiencies that would not develop under conditions of bare survival and heavy competition. I conclude that the bird-forms of Medea aren't as decorative as those of Earth. But there are vastly more of them.

Plants spread by the winds also proliferate. I like the balloon-plants and balloon-animals, and always did; they may well develop on Medea.

How 'bout this? A small life-form, tomcat-sized. In adolescence it grows a paraglider folded along its back. No great amount of muscle tissue involved. Comes migrating season, the paraglider expands in the first big wind. The beast has limited control of it, and no control of the wind, but this season's crop should all go off somewhat in the same direction. And land over a wide new area. And discard the paragliders.

(6) For your consideration: a theory of Bonny Dalzell's. It seems to make sense. Goes like this:

Disregarding insects, Earth's land life all has four limbs and a (sometimes vestigial) tail. Why? Because the first fish to crawl out onto the land had four fins and a tail. The *fish* developed this pattern; they gave up extra fins, other than the fore-and-aft pair, because they weren't needed.

We developed from a pattern advantageous to a fish. If an earlier form had crawled from the sea, today's land life, or Medea's, might have six, eight, ten or more limbs. No, they wouldn't get all tangled up. How much dexterity are you attributing to spiders?

Multi-limbed forms are allowed limbs for specialization. You get four- and six-footed winged creatures, and the beasts treated in (8) below, and others: anything you'd like to dream up.

(7) There are five and six levels of predation in Earth's seas: sharks that

eat smaller fish that eat smaller fish . . . that eat tiny fish that eat plankton. It's a way of concentrating low-energy food.

In Medea's seas I think it wouldn't happen. There are higher energies in Medea's seas: more O_2, more currents to stir up more elements for the algae. On land there might even be almost no predators or herbivores! Instead, herbivores might have real trouble "sneaking up on a blade of grass". Plant life could develop limited motion, or serious defenses, or Venus-flytrap modes of attack. The herbivores might be as tough as the carnivores, in which case the carnivores would be winnowed down to the *real* tough ones.

(8) Consider an eight-limbed creature. It does not lay eggs; it does not bear its young alive. What it does is, it drops the last segment of its torso, excluding the spine (which becomes a longer tail), and including the last pair of limbs, an egg sack, a two-chamber heart, and a store of fat that keeps the segment alive long enough to feed the eggs until they hatch and eat the rest of the meat. Meanwhile, the beast, being not at all pregnant or clumsy, prowls near the egg-segment to guard it.

Listen, these beasts have the equivalent of live birth without its half-crippling their women! From this group will come the intelligent ones . . . or one of the intelligent forms. It's basic to Medean biology that the ecologies come in isolated pockets, with eternal war being fought on the borders.

The Medea Colony

What do humans want on Medea? Most obvious, as Poul pointed out, is knowledge. But a colony would make things more interesting. I'll give some suggestions as to the patterns a colony might take; but first, some basics.

(1) The regions of Medea that are habitable by reason of temperature fall in two crescents on opposite sides of the world: somewhat kidney-bean-shaped regions, their medians on the equator, their horns angling toward Nearside (toward Argo). All settled land would be in the crescents. Argo would probably be visible from everywhere in both crescents.

Men would probably settle in *one* of the regions. Why split your effort? The other might well become a haven for exiles and bandits.

Medea's tides run erratically through Medea's mass; there is no shape for Medea that is quite stable. (From space, it looks somewhat like a banded Easter egg.) In addition, Medea gradually assumes a less prolate and more spherical shape as tides pull it outward from Argo. All of this makes for mountains! There is a lot of the Ring Ocean in the crescents, and there will be lots of mountainous islands in the oceans. Probably humans would prefer the highlands, where the air is more to their liking . . .

(2) But they might not get the choice. The twin suns flare on occasion,

scattering radiation. It might be best to settle near sea level, under as much atmosphere as is available.

(3) Another reason to choose sea level. Medea's life forms (as Poul says) are probably universally inedible. But they can be used for fertilizer, by the megaton! Megatons of seaweed, plankton, whales, fast-moving fish would be scooped up and taken to the colony farmlands.

Medea's seas hold far more life than Earth's, not so much because of the dissolved gases as because the seabeds are churned by geological activity, to provide elements needed by plankton.

(4) There are ultraviolet lamps all over those farmlands. Plants of Earth won't grow otherwise. Power plants may be solar batteries, designed for infrared, scattered over lands where men can't live.

The lamps would keep away most of Medea's life; and a good thing, too! Medea's predators move almost too fast to shoot at. There might be beasts that can take the UV. After all, the flares last for half an hour. Some critters would dig holes in the dirt, others dive underwater, and estivate for half an hour. Other beasts would erect parasols and prey on the temporarily incapacitated ones. We'd get parasol beasts running through the fields and attacking whatever moves—cattle, people, children. What they ate would kill them, but they're still dangerous.

(5) It's three ''days'' of 25.21 hours each, to a Medean day of 75.63 hours. A three-day week, and you can tell what ''day'' it is by looking for the suns.

(6) I see no way in which a Medean colony could go back to primitive conditions. They'd be dead much too soon: crops destroyed when the UV lamps stop working, blindingly fast critters surging in to eat everything in sight—and more, to eat their poisoned corpses—

(7) Everyone wears dark glasses or contacts, to screen infrared.

First Contact

Feel free to make up your own life forms. I give you *Type A*:

Females are born with eight limbs. They lay two clutches of eggs, as described in the first section (8). That leaves them four-limbed. Laying the second clutch also exposes the *male* organs. Males are damn few in this competitive a system because so many females got killed first, and they spend their short lifetimes (which might as well be short, four limbs *does* leave them clumsy) mating with anything female.

Toolmakers are eight- and six-limbed: the females. In males the forelimbs stop being hands: they're needed for walking.

Lifespans: fifteen years to male, and then not much longer. You can't talk to a male anyway. He's too busy looking for females. The females are tough to talk to because humans talk too slow; to a Type A Medean humans seem almost sessile. Communication by messages may be more workable.

(Alternatively: a male may run out of steam after a year. Protected by female society, for the good he did when he was a functioning member of society, he may live long enough to calm down. *Now* you can talk to him; and he's got all the memories of an entire lifetime. A successful life, or he wouldn't be alive. He's your contact with Medean society, Type A.)

*Type A*s will not have an industrial base—not with their short toolmaking lifespans—unless they are vastly more intelligent than we are. Other things are against it. Their cosmology is chaos; little seems to happen in the sky with any regularity. Below the sky, chaotic winds and volcanos and earthquakes. A volcano in the Ring of Ice on Farside, never seen by any Type A, can cause tremendous flooding. (We have to assume *tremendous* masses of water on Medea, to get the Ring Ocean at all.) It all makes sense for chaos in a Type A's life (or any Medean's life), with correspondingly whimsical pantheons of gods. Which reminds one that gods are traditionally long-lived; and to a Medean, so are men.

Conflict

Where is the conflict between men and Medeans? Granted, we're taking up room in what *some* forms might call the best land. There's another point:

Our inroads on the sea life (for fertilizer) don't ruin the ecology. We'd freeze or burn if we tried to take up a *lot* of room on Medea. But Medea's ecologies come in separate boxes! We can certainly foul up *an* ecology, leaving an entire region dying. Two years later other ecologies may have moved in from the edges; everything's changed.

Or humans might spark the war. If Medeans are our equals in intelligence now, they may be our superiors soon. They evolve fast. Wipe them out before they get us!

Afterthoughts, One Week Later

I was a bit hurried when I wrote the preceding treatment of life on Medea and the basis of a Medean human colony. I've thought of some things since then:

(1) A lot of the strangeness of Medea is in the shadows. Shadows from the two suns are blurred and blue and doubled. A third trace of shadow from dull red Argo would irritate the eye; you couldn't see it directly. A fourth set of shadows would be found throughout the human colony: the violet sunlamps that allow edible crops.

All of this would be uncomfortable for those not used to it.

I think that for the first 100 to 200 years, the colony houses and public buildings would follow a pattern. One light source, sunlight-colored bulbs in a high ceiling. Then other patterns would form, and inside the older public buildings it could seem strange; the people would tone down the overhead lights and add indirect lighting, but the shape of the ceiling would remain.

(2) *Lots* of carrion-eaters in this highly active environment. In particular, shrews, tiny beasts with very high metabolisms, who prefer carrion but will kill for meat if they have to. Then, especially in the hotter regions here, loss of body heat is not a problem. We'll find their bigger cousins toward Farside.

XENOLOGY
SOCIOLOGY
POLITICS
THEOLOGY
MATHEMATICS

Frederik Pohl

Nomenclature

Poul's names satisfy in theory, but in practice I do not believe anyone is going to go on very long calling a place Regillus or Lacedaemon. I would think they would at least be contracted (à la "Philly" or "L.A.") to, perhaps, Jilly and Demon. Etc.

Also those are human names. I assume the natives would have had their own. I have devised a species of autochthones of my own to add to Larry's (see below), and my autochthones are soft-tissued around the speaking apparatus. They do not use mouths which are basically adapted for chewing and thus have teeth, palates, etc.; basically they fart their language, using only soft tissues. Their phonemes include liquids, aspirates, vowels, sibilants and plosives, the other consonantal sounds being either very difficult or impossible for them to make.

Their words for the two continents might be something like Nalrah and Nosille. I think they would call the two primaries Luop and Lhop. The superjove they might call Yrral. The global ocean, Iah.

Larry's fertile flying foxes would produce sounds in the familiar mammalian manner, and would have the same range of phonemes as ourselves. However, they are down-to-earth types (see below) and do not deal in abstractions. Their language includes many homonymous words; you have to tell which meaning is proper from context, intonation or guesswork. They do not invent proper names; they name things from association. They call superjove ''Father''. The two binary primaries ''Maternal Grandfather'' and ''Paternal Grandfather''. The ring ocean ''Mother''. The two continents ''Brother'' and ''Sister''.

The colonists, particularly after they have been there awhile, use a mixture of these names, or perhaps several of them indiscriminately.

Balloonists

I accept Larry's fertile flying foxes (which I have come to think of as fuxes), but think there should be another sentient race on Medea (which both races of autochthones, by the way, call ''here'').

I like the idea of the dense atmosphere conducing to airborne forms, and am glad to see Larry laying off true winged ones. (Too expensive in energy budget for intelligence, I conjecture; also a waste of one pair of limbs which could better be used for manipulation.)

I propose to go with ballooning, two possible methods:

1. spinnerets elaborating silk, as in ballooning spiders.
2. gas bags, filled with hydrogen.

Both kinds of creatures may exist, but for the sentients I propose the hydrogen bags.

We have already stipulated plenty of water on the planet, and heavy-particle solar flares which I propose provide the energy for dissociation into hydrogen and oxygen. The oxygen goes into metabolism (and also to add to the high oxygen content of the atmosphere). The hydrogen can fill gas bags.

Hydrogen, being a small molecule, leaks, so the gas bags have to be replenished continually. Figure the dwell time of the hydrogen in the creatures' gas bags as around 20 local days. If there are plenty of flares, they replace it as needed and valve off the surplus. If there is a time of quiet sun, they can't replenish the gas. When that happens the whole population drifts down toward the surface, where they are happily eaten by groundling (and limited airborne, like the fuxes) predators.

So once in a while—oh, every few generations, more or less; could be twice in one year, could be not for a hundred or more—there is a time of dying. Quiet sun, no flares, no hydrogen; everybody drifts down and there is mass dying as they are eaten up. Then the flares start up again, the survivors float away to safety, replenish their population and are very, very happy.

I propose that one species, at least, of such creatures are intelligent. However, they are not civilized. ''Civilized'' implies cities (*civitas*). They don't have cities. What they have is swarm groupings. They float around in swarms, and sometimes swarms coalesce and sometimes they break up, as the winds and weather drive them. They have limited mobility and stay in swarm as much as they can, because they like it that way, but in storms they can't always control their movements.

They do have language. They don't have to breathe, since they generate their own oxygen. They do make vocal sounds by valving off surplus hydrogen. (High-pitched, shrill, much of their communication above the human auditory range.)

I conclude they are non-technological (they don't need it, and being airborne would have trouble developing it) but communicative, introspective, creative. They have great poetry. They know much of astronomy, motivated by their dependence on flares and because the stars are so commonly visible. (If anybody wants to go for psionics, why not?)

I think of them as looking something like downy jellyfish, in bright colors. They have no concept of privacy; everything they do is always done in public. Their social structure is based on pleasure exchanges: the pleasure is sexual (when the creatures are in swarms they are sexually stimulated and release sperm/ova, which float and join in the air) and esthetic. Their greatest experience is like an eisteddfod combined with an orgy. They sing/read poetry (same thing with them), and have a ball.

Their most valued and "highly paid" members are those whose communications (not only auditory, but perhaps visual à la fireflies) are most successful in luring new members to the swarm. (If there is more than one species, perhaps some individuals are capable of luring other species, which they then eat.)

What do they eat? Floating smaller organisms, also hydrogen-generating. Each other. Who eats them? Everything that can catch them, particularly ground-based creatures and low-flying species like the fuxes who can only catch them when the hydrogen fails or when they are incautious. Also their clouds of sperm and ova drift down like manna from heaven and are eaten.

What do they think of human beings? Depends on how they react to human voices. It may be they like them because the humans can supply frequency ranges they can't produce themselves. (It could also be that they hate humans, or some humans, particularly males with deep voices, because those frequencies are repulsive to them.)

Religion of the balloonists

Since they spread and fertilize their seed ad lib, they have no father image; therefore no monotheistic Father in Heaven. (Actually I think of their theological history as representing the triumph of enlightened polytheism, or pantheism, over the crude totemistic primitive notions of One God.)

They believe that Luop and Lhop are the police force of the essence of godliness which exists in everything. When they fail to please them, the stars withhold their flares. (This, by the way, places a great strain on them. Not only does the loss of hydrogen threaten their survival by dropping them to the surface, but they are then faced with the choice of valving hydrogen to speak and sing, or retaining it to survive.)

Politics of the balloonists

They don't care much about anything tangible; they do not collect possessions (have no way of keeping them). As they have no sense of privacy, they have no need to lie. Their imperatives are pleasure, esthetics, and what passes with them for sex. Political issues are: strategies for increasing the size of the swarm—with a minority clamoring for the good old just-post-decimation days when swarms didn't have more than 5,000 members and everybody knew his place.

Psychologically, they have a complete lack of primal hangups from their parents—no parents. But they also have little drive to make their mommies love them and their fathers respect them.

Because they do not need anything that does not drift around them, and because of the constantly changing makeup of the swarm, there is not much need for decision-making on a governmental level. However, the example of human beings may cause them to imitate governmental procedures; they may even decide to go to war, either against other swarms or against predators such as the fuxes.

Fuxes

Religion

Syncretic, sense-free and vital. Like Islam: given to holy wars. There is nothing rational about it in any way, they borrow from all sources including no doubt human sources (''Eat a balloonist for Christ''). But if you question that it is divinely inspired you get killed. Monotheistic. With a pantheon of saints/prophets who invented new convolutions for it, mostly post-sexual males. (Post-sexual males are thought to be the blessed of God. The fuxes don't think sex is fun, I suspect; they are wholly driven; they look forward to the time when they won't be bothered with that stuff any more.)

Politics

They do not form into parties or pressure groups. During their sexual periods they don't have anything to spare for that; when the males are post-sexual, they don't have the glandular drive. They are politically monolithic. Occasionally schisms arise; in fact, they happen quite often, maybe once a generation. But as soon as they exist they are settled by one side of the quarrel exterminating the other totally.

Civilization

They possess cities, factories, schools, government institutions. They submit to taxation and elect post-sexual males to administrative positions. I do not propose that they have much technological expertise; about at the Hittite level, maybe: agriculture, cities, fire and the wheel, and not much else.

Misc.

Interrelations of the two species

Since both are intelligent, they can communicate. But they don't have much to talk about. If a balloonist and a post-sexual fux were penned up together, and the fux were prevented from eating the balloonist, they could compare notes of how they got there, even make escape plans; but they would not regard each other as persons.

Balloonists are cropped by losing hydrogen in quiet-sun periods. Fuxes are cropped by recurrent intraspecial holy wars and political pogroms. Both varieties go through periods of boom and bust in population.

Arithmetic for the two species

Neither uses decimal notation; why should they? I think the fuxes would use binary—if anyone wants to get into it, possibly with a pronouncing convention like the one I outlined in *On Binary Digits*.

If anyone wants to get into something far out, I suggest the balloonists do not use an integer-based notation at all, but represent numbers in terms of primes and exponents. The number ten would be represented as $2^3 2$, the number twenty as $2^{2^2} 2^2$, etc.

The advantage of this system is that multiplication and division are very easy in it. The disadvantage, addition and subtraction are complex skills acquired at the equivalent of the high-school level. The anthropological consequences are that mathematics would come very late in their culture. In fact, I think that number theory would come well after geometry, and arithmetic after number theory; I think their first semi-mathematical discipline might well be the calculus of statement, back in prehistory, arithmetic having been invented within recent generations. When you stop to think of it, there is no reason for non-technological people to know anything much about numbers past, say, 20, except for the artificial demands of currency.

I suspect the fuxes would know something of physics and chemistry, not much astronomy—they don't stand still long enough to stargaze much. The balloonists would know something of astronomy, little or nothing of physics and chemistry. Neither would feel any lack.

Human Societies

I'll give you a choice of two periods: (1) shortly after first settlement (20 years?); (2) climax society after maybe 200 years. For both, there are certain givens, as follows:

Energy

Medea is a hell of a good place for energy-intensive industry. Power is free. It comes from the superjove.

The trouble with solar power on Earth is that the son of a bitching point source, the sun, is absent half the time and moves all across the sky the other half. (Also it radiates a lot of energy in visible light, etc.; superjove is heavy in the useful infrared.) Superjove stays put. It is always there, except during bad weather, and even then a fair amount of IR filters through the clouds. So: twice as much availability; energy in a more useful form; and no need for machinery to track it across the sky. Use all the power you want, boys, it's free.

So there is a valid option for quick and easy industrialization. I don't know what they do with manufactured products; shipping them back to Earth, as Poul points out, is a mug's game. Maybe they might build spaceships?? Maybe Medea will ultimately become the communications hub of the galaxy, because it can afford to send out ships all over? (This would not be true in the long run, because Earth-based humans could presumably do the same thing in space; but Medea could get a jump on Earth because there would be so few urgent demands on its productive capacity.)

The colonists would want power plentiful and soon to run, among other things, Larry's UV lamps. These lamps, by the way, provide a conflict with the balloonists. Their floating spawn, drifting through a UV beam, die. This would not particularly bother adult balloonists, I think, but in sublethal doses the UV would be teratogenic, and the babies would be mutated monsters. I am sure the balloonists would hate that.

Sewage disposal for colonists

The best thing the colonists can do with shit is spread it on the land or dump it into small lakes. In the short run it would be instantly sterilized by contact with the indigenous organisms. In the middle run it would be a pesticide, killing them off. In the long run it would fertilize volunteer populations of Earth-style organisms. I can imagine a colonist looking at a pond and thinking, ah, only 10,000 more bowel movements and we'll have it sparkly clean.

I am not wholly convinced, by the way, that Earth and Medean organisms will *always* poison each other. Not way down at the barely living level, maybe; there is some Earthly organism or other that can live on almost any chunk of whatever that contains reasonable proportions of hydrogen, oxygen, nitrogen, and carbon, and I do not think Medean organisms would be less competent.

So I think the colonists would want to take certain measures to protect themselves against, for instance, fungoid growths. One way to do this would be to keep their personal parasite populations flourishing. A healthy supply of skin bacteria might fend off native organisms which otherwise would survive on dead skin flakes, etc.

What I am saying is, maybe they won't bathe much, but would go around smelling pretty ripe.

They could, to be sure, smear themselves with tailored antibiotics, etc., but I don't see much story interest in that.

Back home on Earth

The social structure of the colonies will of course reflect influences from whatever you postulate back on Earth.

You can make up your own, but there are certain considerations. It can't be *too* impoverished, otherwise it couldn't afford interstellar colonization (cost of which has to be an order of magnitude, maybe two or three, higher than the current US/USSR space programs). If it is poor at all, I think it would have to be a boondoggling gritty-grimy semifascist state which relies on this sort of spectacle for *panem et circenses;* but I do dearly hope none of you will do that, because I am so *tired* of that particular assumption.

I prefer to assume that by this time (ca 2100 AD?), population is under control, resources are recycled and replenished from space, and the world's population lives in reasonable material comfort.

Tensions on Earth: Historically the human race doesn't ever solve social problems, it only outmodes them by generating new ones. So I do not presume that wealth is uniformly distributed or that everyone has his civil rights. I do assume that these are not the issues that concern people anymore.

Primary sources of large-scale conflict a few centuries ago were religious. Currently they are political. I suggest the tensions of 2100 AD may be philosophical: stoic vs epicurean, pragmatists vs mystics.

In the original landing crew I think the crew members would be mystics: they seek to serve an abstract purpose. The colonists, pragmatists. The scientists, mystics, but with a touch of the stoic. See below.

The Medean orbiter

By the way, there is no way anybody is going to colonize this place without looking it over first, which implies a (probably robot) previous orbiting exploration vessel.

I suggest that this is still there, in orbit, for whatever use you want to make of it. I think of it as a visible, maybe even conspicuous, object in the sky, maybe more visible than the old Echo. I conjecture that it was powered through the 50-year interstellar flight (you do all know that it takes *at least* 50 years to get from Earth to Medea, don't you? unless you invent FTL) by PU^{239}, with solar panels deployed once it gets near enough to the binary. Let's say there has been an accident and the plutonium has contaminated the vehicle, so nobody messes with it for spare parts or anything, they just leave it there.

Its supplementary solar-power source is still working, and therefore so are its instruments, including a laser for ranging. Periodically this fires to the surface of the planet, more or less at random. If anyone happens to be directly under it and looks at it he is instantly blinded. The beam itself is visible from afar like a searchlight beam, reflected from dust, airborne balloonist semen, etc.

Perhaps it has become an object of religious veneration to the fuxes. Make up what story you like: maybe when it first appeared it played a part in some decisive event, like Mark Twain's eclipse. When human beings appear and claim to have launched it, what do the fuxes think of this? Worship them as gods? Loathe and attempt to destroy them as blasphemers?

First Settlement: A.S. 20.

The original landing party comes in three styles:

(1) crew members, like Navy personnel; think of the crew of Darwin's *Beagle*. Only they are not warfare-oriented, they are serving the mystic concept of human racial growth.

(2) the scientists. They believe in the Scientific Method, but do not confine it to physics and chemistry; some of them at least are inner-directed and propose to investigate the metaphysics of the natives.

(3) malcontents and misfits, sent along for colonizing purposes. Refugees like the Pilgrims? Convicts like the Australians? Paupers like the Ellis Island immigrants? Some of each, perhaps.

I assume an original colony of maybe 200 persons, arriving in four or five ships, along with enough life-support equipment to set up something at least as comprehensive as the Antarctic installations.

The colonists will not be satisfied with that. One source of conflict will be in the spaceships themselves. The colonists will want to keep them and cannibalize them for parts and raw materials. The crew and scientists will want them to go home in.

Some of the scientists will be anthropologists, intent on investigating the fuxes and the balloonists. The ones who investigate the balloonists will have to fly with them, probably in butane-burner hot air balloons. (The fire will scare the hell out of the balloonists, with all their hydrogen.)

There won't be a lot of food at first, if everything organic on Medea is poison. There will be conflict over that, and a primary motivator for good behavior will be an enriched diet. Some humans will attempt to eat Medean organisms, and perhaps they will find some that are not lethal, at least in small doses, or that can be treated to become edible. Some may be hallucinogenic. Balloonist spawn might give you a high like nothing on Earth.

With a total population of ca 200, assuming present sexual-familial patterns, there will be a hell of a lot of tension over who is sleeping with whom. This will be potentially disruptive, and perhaps should be solved in innovative ways: domestic-relations court, to decide who sleeps with whom? Lotteries? Hormone inhibitors in the diet? Freeforall holidays like the Saturnalia?

Troublesome colonist/scientists will be sent to the cold places, or other inhospitable spots, of which we have said very little.

(By the way, I am assuming the colonists made the flight frozen, otherwise they are pretty damn old by the time they get there. Alternatively it could be a multigeneration expedition, and a majority of the persons on Medea could have been born there or en route and know nothing firsthand of Earth.)

Climax Colony: A.S. 200.

I assume a human population at this point of maybe 200,000. The figure is high because I assume some inflow of additional colonists from Earth, and also an imperative to bring the population up to size permitting diversification and duplication of function, both through normal birth and test-tube rearing of sperm and ova.

I assume contact with Earth throughout, but at a hundred-year time lag for communications and no *force majeure*. Earth may fire off commands, like the Dowager Empress of China to the King of England, but nobody on Medea pays attention.

Some people on the planet are deeply attached to Earth, and form genealogical societies to commemorate their links. They are the hidebound uppercrust reactionaries, primarily mystics. Perhaps they claim to be in touch with Earth in some altered-state-of-consciousness way.

There is conflict between the naturally born and the test-tube born. The test-tube born are optimally raised and have no birth defects or congenital handicaps. They are looked down on as artificial. Crossed eyes or a cleft palate are looked upon as badges of honor; they prove you are vaginally born. Maybe some doting parents attempt to have their contracted-for test-tube babies artificially deformed, with an overbite or sickle-cell anemia, to help them ''pass''. Some married couples have both kinds of children: both vaginally born, and test-tube from their own donated sperm and ova. This exacerbates sibling conflict.

There is also conflict on the mystic–pragmatic front. I assume that nations have arisen; or at least that there are strictly separated groupings like the Moslems and the Hindus in pre-Partition India. Geographically they may intermingle but culturally they are separate.

In any event, there is more than one settlement. Probably there are now outposts even in the quite inhospitable parts of Medea. The darkside can be made locally comfortable by an orbiting solar collector beaming down IR (or microwave energy at a power density too low to be dangerous). Of course, this would screw up the local ecology a lot.

The basic conflict is still between the mystics and the pragmatists. I suggest that each has a special empathy for one of the species of natives. The flying fuxes would be congenial to the pragmatists, the balloonists to the mystics. Perhaps the two human parties fight out their differences through the aboriginals, à la capitalism vs Communism in Vietnam & Korea: the mystics backing the balloonists, the pragmatists the fuxes.

(It would be interesting to devise human-technology weaponry for the fuxes and the balloonists. If anybody is so inclined, feel free. Lightweight missile weapons for the balloonists? Flamethrowers for the fuxes? UV would be lethal against both, so ray guns are easy. Biological warfare would be feasible. In fact, if human "volunteer armies" came rolling down across the Medean equivalent of the Yalu they could kill any number of aboriginals by pissing on them. One story might play out the whole parallel, in fact: complete with student riots against "our" intervention, the rise of Weatherman-like activists, stolid & stunned silent majorities deploring the kids' lack of commitment . . . well, that's not my job, is it?)

As above, it is possible that by this time Medea is in process of becoming the shipping center of the human galaxy. If so, ships are now beginning to arrive from other planets. It does not strike me as fair play to base a story on that, but it might be a minor element.

It is hard to know where to stop, but I think I know *when* to stop, which is now, about 5:15 A.M. The rest is up to you.

PART II:

THE CONCEPT SEMINAR

15 April 1975

Ten Tuesdays Down a Rabbit Hole
Third Seminar

Participants

THOMAS M. DISCH
FRANK HERBERT
ROBERT SILVERBERG
THEODORE STURGEON

Moderated by Harlan Ellison

EDITOR'S NOTE

This is the setting-down of audio transcriptions of a long, exciting evening in April of 1975. It is five active imaginations jackpotting in a free and often-whimsical atmosphere. The evening had a (purposely) rough-hewn, improvisational nature. Creativity is not encouraged by setting too many rules of conduct for the free-for-all. In the course of production of this book, through the publishing maze, the Editor has found an almost pathological desire on the part of nameless production entities (as names are assiduously kept from the Editor, who might seek out said parties with intent to defenestrate them, it cannot be said with any certainty that these are human beings; thus the use of the word *entities*) to eliminate all loose ends, to make everything neat and proper. The Editor feels it is more in the interest of the reader to show these men searching, inventing, fumbling, half-finishing their thoughts before new ones take them, than to satisfy the uptight needs of a cold style sheet mentality. We're not looking at highly polished furniture here; this is much tougher stuff: rough-hewn, unfinished, splinters and knotholes and all. This is what "what-if?" sounds like; knobbly, er-uh, raw and wonderful. '

HARLAN ELLISON:

Well, here we are. The third Tuesday evening and the crowd keeps growing and growing and growing. Jeez, I think you're going out and multiplying. [Laughter]

Ladies and gentlemen, permit me to introduce the members of this evening's group.* At the far left, the gentleman with the distinguished-looking velvet jacket is the world-famous Theodore Sturgeon. [Applause] A few words about Mr. Sturgeon, for those of you who have been living in an igloo and have no idea who he is. Mr. Sturgeon is the author of something in excess of twenty books, which include *Without Sorcery*, *More Than Human*, *E Pluribus Unicorn*, *A Way Home*, *Some of Your Blood*, *Caviar*, *The Dreaming Jewels* (sometimes called *The Synthetic Man*), *Sturgeon Is Alive and Well*, and one of the great science fiction titles of all time: *The Cosmic Rape*. Mr. Sturgeon is the author of the famous story "Killdozer" which was made an ABC television special a short time ago. He is the winner of one International Fantasy Award, one Hugo, and one Nebula.

To Mr. Sturgeon's immediate left the aging *enfant terrible*, in a rather tacky jacket, is one of my very favorite writers in the world, Mr. Thomas M. Disch. For those of you who have not sampled all of Mr. Disch's fourteen books, I commend to your attention *The Genocides*, *Mankind Under the Leash*, *Camp Concentration;* with John Sladek he wrote *Black*

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* Credits and book titles are current as of 1975; elsewhere in this book you'll find the authors' biographies with up-to-date information.

Alice, which was a mystery—marvelous book—*Echo Round His Bones*, *Fun with Your New Head*, *102 H-Bombs*, and the brand new novel, *334*.

Immediately to his left is the indefatigable Frank Herbert. Frank Herbert, author of twenty-two books, creature beyond belief, living legend, author of *Dune*, *Dune Messiah*, *Children of Dune*, *The Eyes of Heisenberg*, *The Dragon in the Sea* (sometimes called *Under Pressure*), *The Green Brain*, *The God Makers*, *Destination Void;* a brilliant, brilliant Indian novel, *Soul Catcher*; an anthology called *New World or No World*, which is a book on ecology. He is the winner of a Hugo, a Nebula and one International Fantasy Award.

The last, but by no means least, of our stellar creators this evening is Robert Silverberg. Mr. Herbert is our Gray Eminence; Mr. Silverberg is our Gray Declivity. [Laughter] He has written more books than Isaac Asimov, though you never hear him brag about it. [Laughter] He has won four Nebulae, two Hugos and a Jupiter Award. He has written *Thorns*, *Nightwings*, *Downward to the Earth*, *Born with the Dead*, *Tower of Glass*, *The Man in the Maze*, *Hawksbill Station*, *Dying Inside*, *Son of Man*, *The Book of Skulls*, *Sundance*, and one of the great short stories, "To See the Invisible Man", which is in hundreds of college textbooks.

These four incredible people have been gathered together tonight to bring to life before your very eyes the planet Medea. Over the past week, two weeks . . . month . . . whatever the hell it's been . . . Hal Clement, Poul Anderson, Larry Niven, and Frederik Pohl created the specs for this planet, which you'll find in this booklet. Approximately an hour ago—maybe two hours ago, I can't keep it straight—these gentlemen were given these specs. They received them only two hours earlier than you. I then took them to dinner, and they began jackpotting about what this world would be, on which the stories would take place. I showed them a painting that Kelly Freas had done. They saw this painting an hour ago. —Would you flash the first slide for me, please? Here is Medea, ladies and gentlemen. [Whistles and applause]

Let me give you a couple of things that Kelly wrote about this before we go any farther. *Dear Harlan, Sorry I've run out of time. The painting is still rather raw in color and rough on the edges for the size you want to project. But it will serve. You can always throw it just a hair out of focus, they'll never know the difference. Next time give me some notice, you son of a bitch. There are a couple of points to note: Like, why a girl? Obviously if she is wandering around talking to balloons with no special equipment except goggles, things are, at the moment, under control. It's an established colony. The fux, which is the creature to the far left, the flying fux, a stabilized female, she has lost her wings—and you'll see the flying ones in the background—has also just lost her posterior.* You'll notice the posterior right over here. This thing with the large vaginal gash in it is the posterior. *These are octopeds. They are eight-legged creatures. She has just lost her* *posterior*—Okay? Aren't you glad you're you?—[Laughter] *which has now become an egg. But while she stands guard over her egg, she can also keep an eye on the city of the Terrans and report back via the talker acquired from the Terrans. The blue lights are the city's gardens. Note that the balloons are keeping well away from the ultraviolet. The scooter operates on broadcast power. It's easier to accumulate in one place and beam than to devise portable accumulators. Power may be free, but manpower isn't. There should be more aerial critters, but the thing is already full. The whitish cloud drifting toward the ultraviolet lights is balloon sperm and ova. There will be trouble.* He says one more thing in the p.p.s. *P.P.S. This is a hell of a time to notice it, but given the colonial situation as stated, and remembering the small size of the fuxes, one can only conclude that there will be a brisk if short-lived trade in fux eggs. Just let it lay.* Most, you'll notice, will just giggle quietly; the others are simply kinky.

At dinner these four people got jackpotting, going to turn them loose for an hour and a half now and let them jackpot at you. Do you all have your microphones on, gentlemen? Ted? Would you speak first?

THEODORE STURGEON:

All I have to say about Kelly Freas is he's given a new meaning to "a piece of ass."

ELLISON:

Frank? Why don't you go ahead and try it?

FRANK HERBERT:

I was hoping that—you know, fun and games we have—but I was hoping we could kinda cut down the snigger factor a little bit tonight; and, ah, get to the work of producing a story.

ROBERT SILVERBERG:

—That's pronounced "Snee-gro". [Laughter and applause]

ELLISON:

Oh, my goodness. Oh, yes. You should have been at dinner, folks. It was wonderful! Why don't you try running through where you were at dinner if you can at all possibly do that. Bob, why don't you start out?

SILVERBERG:

Okay. What we were trying to do at dinner . . . We were handed twenty-three single-spaced pages without margins, full of data. Any of you who have read this will know that it begins with an impenetrable business that goes something like this: "Its diameter is 7,425 miles (11,949 km, or 0.937

times that of Earth); its density averages 5.15 grams/cc," et cetera. I mean, it's a lot of data and we got this at—oh, about six o'clock.

Since then, with some harassment from Harlan, we have been trying to read all of this, digest it, and pass it around among us. And what we were trying to do at dinner was to arrive at some basic knowledge of what this world looks like and what its inhabitants are like. Much of the knowledge we arrived at, I think, was erroneous, now that I've been sitting here looking at this. But anyway let me state what I understand, basically, this world is like, and at the moment I go wrong, you can embellish for me.

The star system: the red dwarf suns Castor and Pollux, eclipsing binaries. A number of planets, one of which is shown in the upper right hand side [of Kelly Freas's painting], that great, swollen Jupiter-like thing which is a planet about a Jupiter and a half in diameter. And like Jupiter, as we now know, it is itself a heat-source. So that the planet on which the stories are to take place is actually a moon of that gigantic planet. If we think of that planet as Jupiter, we can think of this as Ganymede.

STURGEON:

How about Titan?

SILVERBERG:

Titan? All right, Titan. Okay. So, our stories take place on a world which is lit by two dwarf red stars and a giant heat-radiating Jupiter-like planet. There are also a great many moons, fifteen or twenty of them, which are not of significant size. The planet, which the authors of the given data have chosen to call Medea, is a moon of the gas giant and remains with one face eternally towards that planet. There are two hemispheres, an inner and an outer one, the inner one facing the planet, picking up the thermal output. Not so much, of course, of the red dwarfs, but of the nearby gas giant. Now I don't know quite how distant that planet is, but Sturgeon over there can tell me that.

STURGEON:

Ask me.

SILVERBERG:

Twelve feet? Is that what you said? [Laughter] No, no. Let's do it in metric units.

HERBERT:

We can play all night with the elements of a planet. The thing we're concerned about is: what kind of a system is it? What kind of a system is it at the ground level that the people are living in? Because if there is any life on that, it has to be related in some kind of a system or arrangement.

STURGEON:

Well, I think it is important to bring out the fact that this planet isn't properly a planet, but a satellite of a Jupiter-type planet. Which in turn is a planet of a binary system. So we're on a kind of tertiary level. A totally unexpected astronomical situation.

HERBERT:

It's going to have tidal problems in spite of the fixity of the arrangement.

STURGEON:

Yeah, although Poul says here that the tidal effects won't be particularly great because—

HERBERT:

I disagree with him.

STURGEON:

—the Jupiter-type planet which is this planet's sun, really, only travels through an arc of six degrees of sky. That's what it says right here.

HERBERT:

Yes, but it's massive and close.

SILVERBERG:

We don't know how close it is.

HERBERT:

Well, it's close enough that it's pretty big on the sky there, on the horizon . . .

STURGEON:

We know painstakingly how close it is. Hal Clement said so.

SILVERBERG:

Yeah, we can find out. Oh, here it is: it's one million kilometers from the primary. That's close.

HERBERT:

That's very close.

STURGEON:

Kilometers?

SILVERBERG & HERBERT:

Kilometers.

STURGEON:

Wow.

HERBERT:

If it's that close, even if it moves three degrees, you're going to have a tidal effect.

SILVERBERG:

You've got a hell of a mass up there. You've got one and a half Jupiters up there. Only a million kilometers—that's next door!

STURGEON:

What a strange tidal effect, though. I mean, it wouldn't be the wide sweep that we have, for example, when the moon is on the horizon and has a tidal effect right across the—

HERBERT:

It's going to be the tidal effect you get in a cup of coffee if you happen to swing it.

STURGEON:

—it's going to be up there and it's going to be going back and forth.

SILVERBERG:

There's another problem that just comes to mind. You've got one hemisphere of this planet—this moon—well, let's call it a planet. You've got one hemisphere on Medea facing the heat source. The other side is out there, dark and frozen. You have an unyielding back continent, back hemisphere. So your sea is on only half the planet. Whatever tidal stress there's going to be is going to be buffing up against the power of ice—

HERBERT:

It's going to be a cup, a jiggling cup—

SILVERBERG:

Yeah, which I had never thought of before—

HERBERT:

It's also going to have high winds, I'll tell you that right now—

SILVERBERG:

Because of the heat gradient on—

HERBERT:

Yes.

STURGEON:

It's going to be responsive to the weather machine here. Which Anderson makes very much of, the fact that directly under the Jupiter planet—shall we call it the primary?

HERBERT:

Oh, let's call it a planet.

STURGEON:

Has it got a name?

SEVERAL:

Argo.

STURGEON:

Argo.

DISCH:

The problem I have in using all of this information is that to make a story of it you have to bring it into the consciousness of people, balloons, or these fuxes. All right, so the problem is, what effect does this have on the mentality of these different creatures? All of these tides and things in the sky and—

STURGEON:

I think it is necessary to present to the reader and/or audience roughly what the situation is so that if somebody is sent off to Germany or Siberia or whatnot we have to understand where he's being sent to.

DISCH:

Oh, yeah. No, no. I mean in terms of writing the story you have to get in this kind of exposition—

HERBERT:

We're not going to get anywhere, though, if we don't put people in the situation, that is, living things in the situation. What Tom's talking about. Then we see through the reflection of what happens to them the conditions of the planet.

DISCH:

Here's my first theory of what possible mental ramifications this could have. One is that you have a planet in which, if you're at the center of the desert part, you have a circular planet at noon above you that's glowing red. And that's a primary datum of consciousness. You have a world view that is also an ocean that surrounds you, a circular ocean around you. Certainly the denizens of such a world are going to have a really inflated notion of . . . circularity. And if the balloons themselves are basically circular too. Further, my notion is that the balloons have to relate to . . . We were talking about where they might get their gases from, and we were thinking that they would have their origins at the ocean's shore . . . or from water—

HERBERT:

—as plants. Our problem was two intelligent races coming on one planet. Now, that really doesn't make too much sense unless one of them has a plant origin and another has a mammalian origin and then it makes a lot of sense.

DISCH:

Like dolphins and us. We don't cohabit the same world, in fact. So my notion of the balloons is because they're . . . Well, I don't see that they have a good navigational system, so they would have to follow the air currents willy-nilly where they'd be led.

SILVERBERG:

Now these are very severe air currents—

HERBERT:

There are going to be high winds there, believe it.

DISCH:

But I think that they would, somehow, always be sort of . . . Their notion of the world would be of this immense sea doughnut. So that they would have this other circularity to their existence, along with all of the, like, Brownian movement—

HERBERT:

Tom, we have a problem that's just cropped up here. This planet couldn't exist without high winds and if we're going to talk about creatures that are—

DISCH:

—they would be swept inward, to the desert.

HERBERT:

They would be swept anywhere the wind blew.

DISCH:

The basic patterns of the winds would be from the ocean—

HERBERT:

It's going to be circular—

DISCH:

—to the center—

HERBERT:

It's going to be circular—

DISCH:

Well, that's what I was hoping, that it would be circular and they would follow the big circle of life around this ocean.

HERBERT:

No, they would go out in the cold areas too. Because you'd have winds there also.

DISCH:

All right. One final notion that I had. They're talking about what the sort of philosophical systems of these separate creatures are. I think the fuxes would actually worship the balloons as representing the living circular nature. Spherical nature. That they would be a kind of little embodiment of celestial principles.

SILVERBERG:

You've got that big thing up there which is always there. It never goes below the horizon, so the spherical force radiating all of the energy essentially, yes, it's going to be god-like.

DISCH:

Further, I think they'd also understand astronomy very well with all this stuff about double shadows. I think one of the first things any sentient creature would be aware of was that they wouldn't have to go through all the problems we did with, like Copernicus; they would have an almost intuitive understanding of solar mechanics from the start. Also, they are creatures that inhabit the air, so their sense of space and the arrangement of things in space would be very good and they would start with an understanding of astronomy, as it were, built into their bones . . .

SILVERBERG:

Bones?

DISCH:

Balloons don't have bones. Fuxes have bones.

SILVERBERG:

Okay. We have, then, these floating philosophers who are god-figures for the mammalian creatures below. At least we assume they are mammalian; they're warm-blooded. I guess . . .

HERBERT:

We assumed they were warm-blooded. I like Tom's idea; it seems quite obvious they would have a focus on circularity; they would have an understanding of celestial mechanics. Furthermore—

SILVERBERG:

You're talking about the balloons now?

HERBERT:

I'm talking about all sentient life on the planet. I think that's what Tom was saying, I think I agree with it.

SILVERBERG:

The mammals are short-lived. At least I think they're short-lived because their metabolic rate—

HERBERT:

How short-lived and still sentient?

SILVERBERG:

Well, we're given fifteen years by our sources here. We're also given a very intricate reproductive system which we muffed completely at dinner and which I've now dug out of the center. Do you realize there are not really two sexes?

HERBERT:

Yeah, they're all one sex.

SILVERBERG:

One sex evolves into the other, by a process of dropping hindquarters. I didn't know that at dinner, but I know it now.

HERBERT:

I didn't read it until I was in the car coming over—

STURGEON:

After it drops the hindquarters and the ova and the simple heart and so forth, the male principle still remains in what's left?

SILVERBERG:

They drop the hindquarters twice. They start eight-legged, they drop as has happened here [Kelly Freas's painting] . . . become six-legged and the dropped hindquarters is a kind of movable, detachable placenta.

STURGEON:

Featherless biped . . .

SILVERBERG:

Yeah, except it's a sexoped. Then, they reproduce again, drop a second pair of hindquarters. This is like a three-stage rocket. You then expose the male organs, when you're down to the four-legged, the final stage. The creature then is a functional male, and runs around mating as fast as possible with the eight- and six-legged creatures. [Laughter]

HERBERT:

No noise has come up out of these mikes yet about how they do this. We had an interesting idea at dinner that it's done by a kind of planarian worm process. Where one of the creatures eats the other . . . no pun intended. [Laughter]

STURGEON:

That's not really a pun, Frank. [Laughter]

DISCH:

This actually varies from the script—

HERBERT:

I know it varies from the script, but we were told if we didn't like the system we could play fast and loose with it.

DISCH:

But one of the things is the Medea name. I mean, it came out of trying to justify the name Medea, because Medea does do in her two children. And if you had male offspring, if the female were fertilized by eating her male offspring, and this produced the proper internal reactions so that ingestion was the source of fertilization; that's just to be more—

HERBERT:

Then you have a reason for fifteen-year-old creatures to be, if you're taking the planarian worm principle, for fifteen-year-old creatures to be sentient. Because they eat their intelligence.

STURGEON:

Every once in a while you need a little exogamy—

DISCH:

Maybe you could eat other people's children—

STURGEON:

That's more like it. Yeah. [Laughter]

HERBERT:

You have to spread the intellect around a little bit. Okay, there's another problem and that is free hydrogen in the atmosphere. You know, you get lightning there and the whole damn planet goes "boom."

STURGEON:

I have a nice little structure here: given that the balloon creatures are sentient, as the cetaceans are. But the first contact would be made with the mammalians—the fuxes. But then, the balloon things, they're regarded the way most people have regarded whales and dolphins. As just pretty fish: big ones, little ones, interesting ones and so on. Suddenly we discover they have a superior intelligence. And they have it in a totally different matrix. Because, unlike the fuxes who have struggled for survival all the time—they must eat, they must reproduce and so on—these balloon things can leave the surface and drift around. And their thoughts can turn to the contemplative and metaphysical, if you like.

SILVERBERG:

There's no reason why they can't be virtually immortal, as long as they can keep on filling up with gas.

HERBERT:

As long as they can stay clear of lightning strikes—

STURGEON:

Along come human explorers—along comes a John C. Lilly type. Who's interested in human expansion and the discovery of the optimum mind. He discovers the farthest out parameters of the fuxes. And then it occurs to him that these balloons might be sentient, and lo and behold he finds that they are. But he has no way to communicate with them. And then it occurs to him how he can do it: "Oh boy, hot air balloons!" So he builds a lot of hot air balloons and he loads them up with scientists and with instruments and whatnot and he goes after them. Well, as soon as these balloon people, who he doesn't realize until this moment are filled with hydrogen, are coming up there with a living flame . . . this really doesn't help communication one bit. [Laughter]

SILVERBERG:

I like that. I don't like this idea of free hydrogen. I can't swallow that at all.

HERBERT:

It bothers me. I just didn't resolve it at dinner—

SILVERBERG:

What we've been handed . . . and I have to assume that they knew what they were doing when they set it up—is continuing electrolysis liberating a whole lot of O_2, floating out radicals and—

HERBERT:

O_3, and a very unstable becoming O_2—

SILVERBERG:

So you've got a kind of rocket fuel atmosphere—

HERBERT:

Right! And the first lightning strike is going to blow hell out of everything . . . It's one of those holes in the system that we have to resolve. It just won't work that way.

STURGEON:

Supposing the separation is only ozone? Wouldn't they create a shelter for the terrible radiation you expect in this place?

SILVERBERG:

What terrible radiation?

HERBERT:

If you've got CO_2 in the atmosphere, the infra-red on the ground level is going to be much different than we're given here in this book.

STURGEON:

Yeah, but you've got an ozone layer and let's thank the balloon people for donating the ozone layer to this planet.

DISCH:

You know, I just thought, they don't have to be indigenous.

SILVERBERG:

Which? The balloons?

DISCH:

The balloons. Because we've got Earth colonists . . . they . . . one thing that made me think that is that one of the presuppositions about, well, like this picture and aliens in general, is that they are pre-technological. Or sort of. They exist in a realm outside of technology. The fux creature certainly has that aura, a kind of intelligent beast, like from Aesop—

HERBERT:

If we're going to postulate that, I would like to leave it unresolved.

DISCH:

If this planet has such incredible energy resources that it's making it worthwhile for Earth people to be here, for that reason—

HERBERT:

That isn't the reason they are there, though. It's postulated in this data that they're there for energy purposes.

DISCH:

One part of the postulate says they are there because of the incredible available energy. *We* are there; Earth people.

STURGEON:

That's why we expended all this effort and all this time and all this expense. In order to—

DISCH:

That's one theory that's given. But assuming that . . . What I don't understand is that if this is so, and you've got two intelligent species on the planet, why they don't have the technology of their own. Assuming technology is useful, which it is. Now, if there were an indigenous technology you solve the problem of where the hydrogen comes from, because it could come out of cylinders. I mean, they could be manufacturing it for the purposes of filling themselves up, and possibly the balloons didn't evolve there but simply find it a very congenial place to be for reasons of their own.

HERBERT:

May I offer an alternative to this? This is the thing Bob and I were discussing at dinner. And that is that . . . See, I like the idea of two co-existing intelligent races not inhabiting the same territory, co-existing on one planet. The problem is: what are the evolutionary lines to produce two of them? If one of them is plant and if, let us say, they're like seaweed which grew up in the ocean, which has a lot of hydrogen developed in it—

SILVERBERG:

A bladder creature—

HERBERT:

—a bladder creature. And that at one stage in their evolution they break off. They're no longer plants, they are free-floating creatures in the air. Then, if they have to come back . . . See, we're looking for weird, strange, interesting new cyclic ways of life to co-exist, or life to exist and develop on a planet. And the master-race visitor, from another planet . . . well, it may happen, but it's been worked over so much I kind of resist it, that's all, Tom.

SILVERBERG:

I like the idea of two indigenous intelligent races much better than that of two colonizing races. Especially if one of those colonizing races is depicted as balloons, because it's very difficult to develop a technology without hands, as I understand things. And to get across space, we'd have to layer in so many miracles to get those balloons there as colonists that I'd rather have them indigenous.

DISCH:

What evolutionary use do they have for intelligence? As balloons.

HERBERT:

This postulates that they're kind of heavy philosophers.

DISCH:

The point is, what is the functional purpose of philosophy for such creatures?

SILVERBERG:

—What is the functional purpose of philosophy for *any* creatures?

DISCH:

—I mean, if we became balloons, it's possible to imagine, sort of, our minds—

HERBERT:

Is there a professor of philosophy in the crowd who would like to defend himself? [Laughter]

ELLISON:

What about spores, Bob?

SILVERBERG:

You mean crossing the galaxy? Ah—let's save it. [Laughter]

HERBERT:

We've done that story.

STURGEON:

People can't usually do that to Harlan.

SILVERBERG:

Occam's razor: let's eliminate . . . we have enough lousy—

ELLISON:

See if I'll play in your galaxy again.

SILVERBERG:

We have so many improbable things to deal with, let's not invent new ones of our own.

HERBERT:

We're trying to make it probable. That's the argument here. And new.

SILVERBERG:

There is the question of what would stimulate intelligence in gasbags, but I think we'd better take that as given and not wrestle with it.

HERBERT:

I've known some gasbags who were fairly intelligent. [Laughter]

DISCH:

Well, it's not entirely beside the point . . . which is to say, we have to think of motivations.

SILVERBERG:

We don't have to think of biological, cosmic motivations so long as—

DISCH:

We have to think of purposes that these races have. And so far I don't think we have. I mean, like the sexual creatures are presumedly just sex-crazed, until they have their change—

HERBERT:

Hold it. Wait a minute. Purposiveness presupposes a kind of an absolute root to the whole damned universe. And maybe since Einstein we don't have to have an absolute root to the whole damned universe.

SILVERBERG:

No, no, Frank. There is a kind of purposiveness that I think we should—

HERBERT:

But not necessarily this kind—

SILVERBERG:

No. There are imperatives of the universe . . . structural imperatives. Those winds going around the temperature grade—

HERBERT:

That's the way it works in that system.

SILVERBERG:

Yeah, okay. We have a system and— I don't want to go into higher purposes, but we have biological—

HERBERT:

I was going into the biological question of the purposiveness implicit, the assumption of purposiveness. There has to be a biological reason, we'll say here, for these creatures to be intelligent. But that biological reason could be an accident.

SILVERBERG:

Well, certainly it's something we don't need to know. We don't know why *we're* intelligent.

HERBERT:

Yeah, that could be an accident too. We don't know. So, what I'm saying is we don't need to make a big thing out of it. If we assume it is true, the givens in this little blue booklet, then we can ask to what use is this intelligence put.

DISCH:

If they're going to be knit into a story, they have to have motives, that's all I'm saying. Those motives have to come to interaction.

HERBERT:

On your earlier idea, Tom, I like the idea of the circularity and the worshipping. We could play the first European on Tonga Island kind of thing. That, since they are worshipped and they find out about it, it's a great ego massage.

SILVERBERG:

The balloons find out that they are worshipped?

HERBERT:

Yeah.

SILVERBERG:

Well, what is the nature of the contact between the balloons and the mammal creatures before the Earthmen get here? We've not talked about that. Is there any? The balloons are presumably high-flyers. The mammals—I would fight anything but gliding creatures. They certainly aren't soaring eagles up there . . .

HERBERT:

We're told they fly. We're told they are like flying foxes and I presume—

DISCH:

—You know what they could use? They could use the balloons like gliders, as airplanes to lift them up to a certain point. They could actually use the balloons to gain elevation . . .

HERBERT:

Who?

DISCH:

The fuxes. That would be a sort of long range relationship.

HERBERT:

We could do a really wild religious trip on this. That the balloons under some ritual arrangement come down and select certain fuxes to take up and release for a long soar. [Laughter]

SILVERBERG:

Hmmm. I like that. Would you go along with me in the notion that the balloons are the superior intelligence?

HERBERT:

Yes, I would.

SILVERBERG:

That the fuxes are using up too much energy simply flying around and reproducing while the balloons are hanging there—

HERBERT:

Are sitting there thinking deep thoughts—

DISCH:

—unfair to fuxes—

STURGEON:

Communication between them is a possibility, but it isn't a necessity at all. I mean, what necessity is the intelligence or the nature of communication between a mountain goat and a cetacean?

HERBERT:

There could be one level of communication that would be an interrelationship of behaviors between the two life forms. They could each misinterpret it.

SILVERBERG:

Hypothesis here, having to do with plot, which is perhaps getting us ahead of ground—

STURGEON:

Yes, and I'd like to get right back to the beginning, whether we use it as the beginning of the story or not. Given that Earthmen come to Medea, did they find or are they looking for something? If they found it, okay, I mean that sort of explains itself. If they're looking for something, what is it they are looking for?

SILVERBERG:

Looking for its own sake would be—

STURGEON:

—knowledge, what else?

HERBERT:

Given Medea and the way it works, there'd be a hell of a lever on human knowledge about the universe, if they found out how that system originated, how it worked.

SILVERBERG:

What I wanted to interject here as a possible springboard for plotting later is, suppose there were no real contact between the two intelligent species until the arrival of the Earthmen. We have the fuxes at one level, worshipping the balloons at the other. The balloons really not giving a damn about—

HERBERT:

Earthmen are middle men, then.

SILVERBERG:

Yeah.

STURGEON:

They become the interface and really knock the intellectual structure of both all to hell.

HERBERT:

I like the basis of Tom's other idea, though, but it doesn't have to be what we would call communications according to communication theory. It could be just an interrelationship. They behave in a certain way so they do certain things together.

SILVERBERG:

The soaring . . .

HERBERT:

Yeah, that sort of thing.

DISCH:

Remember, they don't have to think of each other as intelligent.

SILVERBERG:

Is there communication between the shark and the sucker fish, for example? But they use each other.

HERBERT:

Is there communication between a porpoise that leads a boat into Papeete Harbor, you know, and the boat?

DISCH:

There is one strange possibility and that is, aside from worship, there could be aesthetic reasons. I was thinking if both these creatures have got to talk, the spheres themselves will have to release gas through some kind of aperture and it will probably be a very loud sound, the music of the spheres . . .

HERBERT:

You're very close to the edge right now, you know that? [Laughter]

DISCH:

Ah, whales. Whales have their music, right?

STURGEON:

As Shakespeare said, ‘‘Farting is such sweet sodom.’’ [Groans]

DISCH:

Well, Judy Collins likes whales, right? Not from a deep understanding of whaleness but because the sounds sound nice. The fuxes might have that same sense of the balloons.

SILVERBERG:

How are they picking up these sounds?

DISCH:

Hearing them.

SILVERBERG:

Awfully sensitive ears.

HERBERT:

They would be very sensitive to vibration. And I see another interesting thing here: one balloon couldn’t talk to a human but two could. You ever rub your finger across a balloon? You know, if two of them got together they could imitate human speech.

SILVERBERG:

What is the sound of one balloon rubbing? [Laughter]

HERBERT:

That’s where I was going and you took my line! [Laughter]

DISCH:

The balloons could have their own fingers. A balloon that carries up a finger that it could rub itself with.

HERBERT:

The moving finger writ, having writ . . . [Laughter]

STURGEON:

These guys really zen you, don’t they? [Laughter]

DISCH:

Why are people there? That’s the problem.

HERBERT:

Okay. Bob’s idea of moving toward plot is probably a good idea. We should move along . . . getting ourselves a basis for various plot structures.

ELLISON:

Can they rub with those things hanging down? Can you see in the slide behind you there?

SILVERBERG:

Those look like fairly useful organs. I didn't realize that they had them because I haven't looked at the—

HERBERT:

We haven't had a microscope to use on the picture yet.

ELLISON:

If there's anything you want to see at any point, just tell me and I'll be happy to flash it for you.

HERBERT:

Okay, they could rub the balloon surface and create speech and talk. [Laughter]

ELLISON:

Wait a minute. I don't know what they're laughing at. Maybe it's my ineptitude with this thing.

HERBERT:

Why are they laughing?

ELLISON:

I don't know.

SILVERBERG:

It was your offer to flash, I think.

ELLISON:

They're easily amused.

SILVERBERG:

Those tendrils could be used for a lot of things. I hope not technological things, but they could certainly be intertwined. They could be used for picking up a hapless fux from the surface—

ELLISON:

—but are they big enough to pick up a fux?

HERBERT:

For dressing the woman's hair—

ELLISON:

—that one doesn't look a thing like Warren Beatty.

SILVERBERG:

We could spend all night on the gross anatomy of those balloons, the musculature and all the rest, but let's reserve that. I want to know what this planet looks like. What the landscape looks like. We have one continent that counts on the Argo side of things. And the land is pulled up by tidal forces toward a central mountain, in the desert, which is going to be hot and I bet is going to be holy as hell. Right?

HERBERT:

Yeah, yeah, no doubt. The high place—

SILVERBERG:

It's going to be the high, hot place. Probably unapproachable too, except—

HERBERT:

Maybe in certain seasons—

SILVERBERG:

—by very determined pilgrims.

HERBERT:

You're going to have somewhat of a seasonal change on this planet.

DISCH:

When the balloons would go into the center, wouldn't they expand like gases do? And wouldn't they finally burst if they got too near the center?

SILVERBERG:

If they got too close to the center, I imagine. Certainly they'd come under some awful stress.

DISCH:

And that might be *their* life cycle.

HERBERT:

Well, we're back to the problem: are they free-moving or are they mobile?

SILVERBERG:

If they're not mobile in some way, if there's no valving arrangement, then the convection currents are going to sweep them—

HERBERT:

—all over the— You're not going to see a bunch of them together like this [Kelly Freas's painting].

STURGEON:

It's a question of their understanding the convection currents, though. As I recall, Hal posited concentric spheres of air mass movement.

SILVERBERG:

Concentric spheres? A hot zone—

STURGEON:

—with a cold zone outside.

SILVERBERG:

With a wind-whipped perimeter—

STURGEON:

—if they can command their altitude and they know their air machine as a whole then they can go where they want to go.

HERBERT:

Ted? Ted, given the circumstances of this planet and that land mass, with the heat sources we're describing here, we're going to have an amplification of what is called the city climate effect. Where the prevailing winds are always going to be from the outside up and you're going to have currents at all points, all the way around, going this way.

STURGEON:

The outer sphere could be rather different and, as Hal said, sluggish. And there's also the matter of . . . As this thing circulates around its jovian planet it exposes itself to heat from the stars. So the backside of the planet does get some heat from time to time.

HERBERT:

That would just create terrible temperature and weather changes.

STURGEON:

It would but we haven't negated that yet.

SILVERBERG:

During the winter we're likely to get hot winds rushing downslope from that center, causing a confusion of winds.

HERBERT:

You're going to get the air mass over the planet's one hot continent. You're going to get that rising. That's going to pull air in from the cold areas, and it's going to pull it in from all sides. So that on the high hot area it's just going to be pretty fierce.

SILVERBERG:

Yeah, but that area of . . . oh, what would it be . . . low pressure in the center has got to go somewhere. You can't continually pull air up . . .

HERBERT:

It'll be chilled when it gets up high and it'll go back to the—

SILVERBERG:

Go back down. Yeah. So you're going to have a kind of—

HERBERT:

Not straight down.

SILVERBERG:

Well, it's going to go downslope. The planet is sloping toward the ocean. The continent is. So you're going to have a kind of scirocco effect.

HERBERT:

Yeah, but not—you see, the return flow is not going to be at ground level. It doesn't happen in the city that way. I don't know of any system where it would work that way.

SILVERBERG:

It happens in a mountain system . . . coming down the side.

HERBERT:

But not because of heat, you see; that is what is called a temperature-gradient return flow. What we're talking about is a driver, a system like a city. The prevailing wind for Los Angeles is going to be from the outside, no matter where you are.

SILVERBERG:

Well, there's Santa Ana season—

HERBERT:

But those are— I'm talking about prevailing winds.

SILVERBERG:

What I'm groping for is a seasonal counter-wind which would have social consequences.

HERBERT:

Ah.

STURGEON:

Listen, would there be a crater in the center of this central mountain?

HERBERT:

Why? I'm not objecting, I just want to know.

SILVERBERG:

The omphalos? The holy center?

STURGEON:

Yeah. Because if there were, I mean, a really deep crater— Buckminster Fuller designed a house way back in 1941. I only found out about it recently and I'm sorry it was so recent; I think if I'd found out about it earlier I'd have one by now.

But it was a kind of a pear-shaped building, and it was silvery, it was metal, and it was right out there under the hot sun and you'd have to assume it was an oven inside. Actually it wasn't, it was about forty degrees cooler than the ambient temperature outside. And the reason for that was, there was a boundary layer of air that climbed up the sides of the building and there was an orifice on top. As that hot air rushed up, it sucked cold air from a pit under the building. Then there was an underboundary of cool air which comes washing down over the outside of the building as well as ventilating the inside. And there was an automatic little weather machine, an incredible thing. There's no reason why that should not be done on geological terms.

HERBERT:

This would answer one of my objections to the weather system on this planet. If we made this, meteorologically, a Bucky Fuller pear in effect in the way this system drives, it would answer your problem too, because it would make very interesting climatological changes. But they would be climatological changes that—you'd have to get them by migration—you'd have to migrate into the climatological change because the system would drive it a similar way at all times. —No, it wouldn't. I take that back. It wouldn't. No.

SILVERBERG:

I'm thinking of something that pulls the balloons centerward and expels them. A planetary rhythm that is reflected in the control rhythm of the balloons. I still haven't settled in my own mind how much motility these balloons have. How much control they have over their own motion.

STURGEON:
If they have altitude control and know their currents, and can feel their currents . . .

HERBERT:
That's exactly where I'm going! If they can control their altitude then they can go damn near anywhere. If we postulate a system which drives in the way that we're heading for now—

SILVERBERG:
They could control their altitude by taking in hydrogen or venting it—

HERBERT:
—or venting it, yeah—

STURGEON:
—or by compressing it in a special chamber, like a fish bladder. It does exactly that, doesn't it?

HERBERT:
That's right, it does. Good idea. Okay. Am I right that that jovian planet rotates through six degrees? Is that right? Changes six degrees? As I remember correctly in the little blue book. Do you remember, Tom?

DISCH:
No, but I was thinking of some way—about these balloons and this system . . .

HERBERT:
Six degrees? That would move the climate the way you're asking for.

SILVERBERG:
Right. We'd have a kind of winter.

DISCH:
They might be going upstream, like salmon. Also, the only source of water needn't be, assuming they get their gas from the water . . . If they get it from this seaweed that is the first part of themselves that—

HERBERT:
—they get it from the mother planet—

DISCH:

—fills with gas, right? And if, periodically, they sort of descend and refuel or re-gas, they can be over their whole life history moving slowly towards—moving gradually inland, like a salmon going upstream. The water itself flowing to the ocean would take care of the sort of sexual process of returning the generative materials back to the start of all this. But the notion of them as philosophers means to me an acceptance of death. And I want the balloons to be interesting. I want them through their whole life to move toward their death by an inexorable motion. For me that would be the beauty of them.

HERBERT:

We have two other problems here we haven't even talked about, and that's the constant aurora borealis, which would play hob with radio and that kind of transmission. And the fact that these things that we're postulating would have hydrogen in them, and we would have lightning. We'd have a lot of lightning in this climate. Especially if we're postulating the movement of air this way with a surrounding ring ocean. We're going to have clouds. We'll have lightning, and that means if lightning ever touches one of those damn things it'll go ''bang.'' And that could be a very religious experience. [Laughter] It might have something to do with being very philosophical about death. [Laughter]

DISCH:

How many salmon get all the way?

HERBERT:

Yeah, that's right. And it could have something to do with their reproduction, too. What if when they burst in this way it's necessary for the reproductive cycle.

STURGEON:

When it hits you, you holler.

SILVERBERG:

I want to incorporate pieces of the last things that each of you said. I don't like the idea that the death of them is connected with the change in the flow of the winds, because that's going to be happening constantly, and these creatures have to be long-lived if they are going to be the heavyweights that we say they are. On the other hand, your notion on the necessity of death is, of course, beautiful. So I think we accept Frank's lightning death. And I would like to suggest that these creatures are essentially immortal unless they are hit by lightning. That death among them is a totally random phenomenon. They are conscious of death but it comes without warning, without reason.

HERBERT:

A great new psychological experience to build a philosophy on: immortality except for a random intrusion of death.

DISCH:

What would the age curve be of such? I mean, it would start out very high, right? And then it would—no, maybe it would just go like that—

STURGEON:

They wouldn't necessarily have to age at all, Tom.

DISCH:

No, there would . . . there would be some few random creatures who managed to live a long time by chance. And they would have hierarchical status probably.

SILVERBERG:

Consider them as sequoias. A sequoia will live more or less forever unless something happens in its root system that knocks it over. And in practical terms that means they'll live—well, the mountain sequoias will live three or four thousand years, but none of them seems to last longer than that.

HERBERT:

And when they fall, other sequoias grow from them; and it's interesting that the fallen sequoia is then called a nurse log.

DISCH:

There's one obvious possibility here, in terms of the story. Your notion of the human being who wants to communicate with them. He should share a lightning death. It should be like Phaëthon's chariot. And he should learn from the balloon to love the lightning.

STURGEON:

Oh, beautiful. Beautiful.

ELLISON:

That's lovely.

HERBERT:

Think of the intrusion of the humans into the previous relationships between the two life forms. It might have been a long-term balanced relationship in which, in a sense, the flying fuxes would be sort of like the pigs for the ancestors as far as the balloon creatures are concerned. They would be a signal of what was happening on the planet's surface. Then think what happens to that relationship when humans come in and form a link between them.

SILVERBERG:

What is the effect of the death of a specific balloon on the creatures below? Something like that of a falling angel. And what if the intrusion of the Earthmen causes, accidentally we would hope, the death of a number of balloons in the early stages?

HERBERT:

What about the landing of a ship with its flame? It would be the arrival of God. Because it would create death for a whole lot of them.

DISCH:

You know what there could be—

ELLISON:

What if the ship landed during an electrical storm?

DISCH:

—there could be a one to one relationship—

ELLISON:

—taking out a lot of balloons with it?

HERBERT:

Tom's on to something. Listen to this.

DISCH:

—there could be a one to one social relationship between a specific fux and a specific balloon. Which is to say: he goes up in that balloon. And say the balloons stick to a pretty limited area, and so would the fux, and they develop—

HERBERT:

Symbiosis is what you're talking about.

SILVERBERG:

Spiritual symbiosis.

DISCH:

But if Earthmen did lead to the deaths of a lot of balloons, they would be killing off the guardian angels of individual fuxes who would suddenly be—and usually the fux— No, it wouldn't work—

HERBERT:

But we had postulated, you see, a different attitude toward the source of death and its relationship to life.

SILVERBERG:

I like part of that, Tom, but we have a smaller population of balloons than fuxes. We have to. The fuxes are warm-blooded, short-lived, fast-breeding. The other things are floating, slow-living . . .

DISCH:

It wouldn't have to be one to one, but in each fux's case it could be to a specific balloon.

SILVERBERG:

Yeah, each balloon may be responsible for a thousand fuxes.

DISCH:

A family. They would organize. Their social organization would be that they would belong to a certain balloon.

HERBERT:

Let's see the balloons . . . They have different colors, you notice?

STURGEON:

There's a very interesting cultural product here. You'd have fuxes who had no balloons. You'd have fuxes who had balloons. You'd have fuxes who were, in effect, widowed from balloons. And each of these would have a special place in the culture.

SILVERBERG:

A caste of outcasts.

HERBERT:

Tom said something a little earlier that relates to a fact that we can deduce from this planet; and that is, if they are—see, we have multiple shadows and an instinctive knowledge of celestial mechanics. You're also supposing another fact: that they would have a very sharp ability to detect differences in color. They could detect differences in color that we would have to use electronics to do. And, let us say that there are no two balloons alike. And then you would have an immediate problem: the Earth humans coming on, because the fuxes could always tell their balloons, and the Earthmen might not be able to detect the difference. You know, one Chinese looks like all the others.

ELLISON:

I'm sure that just charmed the hell out of all the Orientals in the audience— [Laughter]

HERBERT:

Sure. My Chinese friends say: "One Occidental, you know, eat one and you're hungry an hour later." [Laughter]

DISCH:

Thinking back, isn't it more likely that the balloons would actually communicate by color? I mean, because their shapes are so big and prominent?

HERBERT:

Communicate with each other by color? Good idea.

DISCH:

Right. I mean, they would create different bands and patterns. Like the Goodyear dirigible. They would send out messages.

SILVERBERG:

These aliens are getting so interesting it seems almost a pity to dump a bunch of Earthmen down among them.

DISCH:

People aren't necessary. I mean, you've got enough drama going that you could actually do a science fiction novel without people in it; about aliens on another planet. [Applause]

STURGEON:

You know, I don't think they like people.

DISCH:

Some of my best friends are people—

HERBERT:

What happens the first time one of those balloons comes down and lifts a human being and takes the human up to twelve thousand feet and lets go of it? [Laughter] You'd better have your hang-glider ready.

STURGEON:

Speaking of which, I had an experience two weeks ago that was pivotal to me. I went out to see the world hang-gliding championships. I'd never seen hang-gliders before and they are absolutely extraordinary . . . just simply extraordinary. First of all, they're minimal surfaces. It's amazing to me that we had to go through the complexities of aerodynamical engineering before finally somebody came up with this concept and started doing it. There is no reason why these machines shouldn't have been built in the 13th century, or the 9th century. When I think of Otto Lilienthal with his eleven wings, one on top of the other—and the guy used to jump off a cliff with these things, break his back, spend six months in the hospital designing one with seven wings—come out and jump off another cliff. [Laughter]

SILVERBERG:

What Frank has given us is a kind of composite hang-glider. When a balloon fetches a—

STURGEON:

That's the whole point. Supposing we have our Earthman . . . Now let's posit a situation where we have two intelligent species, one's balloons and one is fuxes. The Earthman comes there and, because he has this kind of perspective, is able for the first time to recognize that these species have no connection with each other. I cite again the mountain goats and the cetaceans. But given that they're both highly intelligent, highly sensitive, they have just totally different, different structures. As John Lilly said, ''The cetaceans think 'wet', that's all; and we think 'dry'.'' We have got to learn a little bit of difference between these two things. Okay, you think ''balloon'' and you think ''fux.'' And this guy wonders, and he becomes obsessed with the idea, what happens if he becomes an interface between the two? He teaches them to know one another. And one of the things that these winged creatures can teach them—they can't teach the balloons to have wings, that's structurally impossible—but it might be possible for them to teach the balloons, when punctured, to become hang-gliders. Thereby changing their whole attitude about life and death and—

HERBERT:

Think of what that would do. The reverberations of such an idea through a culture. The example being that when U.S. Aid went into an Arabian village and said, ''You know, it's bad that you all have to come to the central well. We're going to put a water faucet in every house.'' And the minute they did there were big sociological problems: rape, theft, all kinds of things. Because the well, where all the women came every day to get water, was also the social adjustment center. Where everybody knew what was going on in the entire community and could adjust to it. And when they left that, when they got rid of that, they had anarchy. Now, think of what happens when we come in with our great intrusion. Think of the disruptions that are going to occur in this previously static or semi-static pattern.

STURGEON:

That's a good title, by the way: "The Great Intrusion".

SILVERBERG:

Ted? Are you scrapping that concept we had a half hour ago of the balloons, for reasons god knows what, picking up individual fuxes?

STURGEON:

No, by no means. This might be the means by which that happens.

DISCH:

What I think—the distinction to be made about contact is that there's no "I–Thou" relationship between the balloons and the fuxes. They don't recognize each other as moral or spiritual co-equals.

SILVERBERG:

But is there, nevertheless, this *soaring* interaction? Or is that a new spiritual event that comes to the planet after the Earthmen?

HERBERT:

We could postulate that the balloons do it for one reason and the fuxes accept it for another reason. There could be no communication between them at all.

ELLISON:

Gentlemen? The herd is getting a little restless out in back. We've had a few people who wanted to offer some suggestions and some questions. A little feedback might help. If anybody has a question, we'd like you to come down here. There will be mikes in a minute. Would you step down here and line up?

SILVERBERG:

Not all of you. Not all of you!

ELLISON:

Hold the bus! Now wait a minute!

HERBERT:

We could repeat the question from up here if necessary.

ELLISON:

No, we're going to give them mikes. And I'll hold onto the mike so they can't run amuck. Could we have a little bit of house light? Ladies and gentlemen, I'd like to draw your attention to Mr. Larry Niven, who created the aliens. [Applause]

Okay, the procedure is: you give us your name, so if it's an intelligent question and we're going to use it in the book we can get in touch with you. And make it short and snappy.

BARRY WRIGHT:

A suggestion of, perhaps, a relationship between the balloons and the fuxes that could give you that relationship that could be upset by the advent of humans. What if, as you say, the fuxes gain some of their intelligence through the eating and planarian-like ingestion of genetic material in their reproduction cycle. If the philosopher, obviously more intelligent, balloons occasionally are randomly selected by lightning and killed, what if they fall to earth and could be ingested by the fuxes, thus increasing the genetic pool there? This relationship could—

HERBERT:

A great idea.

DISCH:

Yeah, beautiful.

SILVERBERG:

This is my blood, this is my body . . .

DISCH:

Oh, yes.

MIKE PICKERING:

Some planet or satellite of Argo close enough to this planet that would cause an eclipse when it went by between Argo and this planet—

SILVERBERG:

An eclipse of Argo? No, it wouldn't be possible.

HERBERT:

The satellites are much too small.

STURGEON:

What was it that Hal said? It covers how much of the sky? How many degrees?

HERBERT:

Twenty-three, I think he said.

RICK FOX:

I just wanted to know—now you say that they're picking up the fuxes. I was just wondering, for what reason are they doing this? I mean, is this for philosophical reasons? Why are they picking them up?

DISCH:

Ballast?

FOX:

You say that they are not in communication.

HERBERT:

Maybe it thrills them. We haven't really come to a good reason for it yet. But whatever the reasons the balloons do it, it would be a much different reason than the fuxes' reasons for accepting it. Or they would understand it much differently.

DISCH:

Or possibly they're just captured.

AUDIENCE MEMBER:

What makes you think the fuxes accept it?

ELLISON:

What if the fuxes don't like it? When God takes you to heaven, you accept it. [Laughter]

SILVERBERG:

Getting at the motives of aliens is going to be a secondary problem. It's getting at their behavior itself. Finding out what they do is, at the moment, more important than why they do it.

FOX:

Okay. I was also wondering: now, do these balloons always have to be round? Is there a possibility that they can change their shape? I was wondering, even with those appendages that they have, possibly they could wrap them around themselves and change their shape, and thereby use aerodynamic principles for maneuvering. If you want to get into talking about maneuvering.

HERBERT:

Very neat. Make a glider system out of them . . .

STURGEON:

And it doesn't have to be only that. It can be that *and* altitude control. And they could be able to sense ground currents . . .

HERBERT:

Now they're getting complex, which is what we want.

MIKE STRATHEAM:

I was wondering: why do they have to be filled with hydrogen? Why can't they be filled with helium? And when they burst, with the helium, the lightning striking the helium—it will cause a fire that will destroy whatever they have inside them that's going to float around.

HERBERT:

But you have to have a planetary cycle, a system of some kind that produces the helium, and so far we haven't developed that kind of a system.

SILVERBERG:

Helium's not all that common. It's very rare.

STURGEON:

Anyway, it's the hydrogen that goes "bang," not helium. It's the helium that doesn't.

HERBERT:

The reason helium is good in lighter-than-air gasbags is that it doesn't go boom.

STURGEON:

However, it is not as good as hydrogen, let's not forget that.

HERBERT:

It doesn't lift as much.

UNIDENTIFIED No. 1:

I would suggest that they manufacture their own hydrogen from water by, say, an internal bug that they might carry as a symbiote. They could maneuver somewhat by using jets like octopuses do, since they are an octopus shape right now.

STURGEON:

That's a good thought.

SILVERBERG:

We've still got all that free hydrogen handed to us by the electrolysis, if we accept that. Which I don't want to do if I can find a way around it.

STURGEON:

Yeah, you've got a lot of oxygen left and that's not so hot.

UNIDENTIFIED No. 1:

You're not going to have that if you have a semi-permeable membrane that separates them inside—hydrogen's a lot smaller.

HERBERT:

A semi-permeable membrane inside, that separates—

UNIDENTIFIED No. 1:

Inside the sac the O_2 molecule is much larger than the H_2 molecule. And you could have what would be impermeable to oxygen, and they could sort of force it out.

HERBERT:

A kidney.

UNIDENTIFIED No. 1:

More like a divided chamber where the hydrogen and oxygen are separated and pushed out and that could provide part of their motive force, or they could use the oxygen as part of the metabolic process and excrete it as CO_2.

SILVERBERG:

There are all kinds of biochemical possibilities. I'm just worried about the hydrogen that's allegedly in the atmosphere.

UNIDENTIFIED No. 1:

I dropped the hydrogen in the atmosphere because you've got a partial pressure of oxygen which is greater than on the Earth. And that would tend to form water quite quickly, I believe. So you don't need free hydrogen in the atmosphere if they manufacture their own. Therefore, you can have lightning and the whole planet does not go ''boom.''

SILVERBERG:

But it rains a lot.

HERBERT:

We weren't going to accept that anyway, but your explanation of it is excellent.

ELLISON:

We've got such a dumb audience here. [Laughter] I didn't understand a word anybody's saying.

BILL FINKELSTEIN:

I'd like to propose, also, that when the humans first land on Medea, that also they're looked upon by the fuxes as material to increase the wisdom of the fuxes by consuming the people. Also, there's a basic fallacy in having the fuxes lifted by the balloons. Unless the balloons ganged up in very large numbers, they're much too small.

SILVERBERG:

We haven't talked about the relative sizes of these creatures at all.

FINKELSTEIN:

Then we're going to have to alter the painting.

ELLISON:

You can't tell depth from that.

DISCH:

You can't tell how far away it is.

HERBERT:

They're not close enough to get relative size right now. The closest one back there could be ten times the size of that fux on the bluff.

FINKELSTEIN:

One final quick suggestion: in the document there was mention of shrews, which were basically carrion eaters and could also kill occasionally. Perhaps one tangent to a plot could be have them ganging up and consuming vast quantities of people, fuxes, what have you, and that could be generalized to include increasing wisdom on the part of the shrews.

HERBERT:

Hey, I've got a marvelous idea what the value of this area is to humans. Everything is inedible to humans on this planet, except fuxes. And there is something metabolic that changes when you eat a fux, and you can learn by eating. [Laughter] That's tricky.

MARTIN J. COHEN:

First, about the balloons. It occurs to me that if you had a lot of them together it might form something like a group mind. And so their intelligence is increased far beyond an individual one.

ELLISON:

Wasn't that *More than Human*?

COHEN:

Perhaps. But it also might apply in this situation even though it's not Earth.

ELLISON:

Gestalt. Thank you.

BRAD KAY:

Very quickly, number one: lightning is a means for destroying the balloons. You'd have to have an exceptional amount of lightning. I mean, it would be zapping all over the place. That requires some really incredible weather. Think about that. Number two—

ELLISON:

Think about that, dummies! [Laughter]

STURGEON:

There's a lot of weather on this planet. They said so.

HERBERT:

We've already postulated that this is a really weather-filled planet.

KAY:

Well, all right. Number two: about the Earth colony. Since this is not a closed environment, I see a certain amount of urban sprawl in the future and the attendant problems, crime and juvenile delinquency . . .

HERBERT:

We've solved that by this time.

KAY:

We have? Not in three hundred years, you know, or however long it would take for this thing to happen.

PAUL COKER:

As I understand it, as you described the weather . . . the cold air would be going from the ocean, gradually warming up and going to the high peak inland, and then the hot dry air would then gradually be going back. So you would have your moisture down near the ground, where all your rain and storms would be. You might have two levels: a dry level up high; you'd have all your lightning down below. The balloons wouldn't necessarily have to enter the lightning. They might have to go through the lightning to get to the fuxes, that might be a religious-type thing.

SILVERBERG:

We were talking about a seasonal push from the center outward that might sweep the balloons into the lightning zone at a particular period of the year.

HERBERT:

I didn't understand the point he was leading to. What's the point?

COKER:

I was thinking more along the lines of—perhaps it would be their choice to go into the lightning. It might be a religious experience. Also, for the helium in the balloons you could postulate that they take in air and eliminate everything but the helium—all the reactive elements, that would be a mechanism for their being helium-filled instead of hydrogen-filled.

HERBERT:

Okay, we've accepted this. We'll think about it.

MITCH SELLECK:

What I might suggest as a possible, is that these are air-going jellyfish. And as such, by whatever means they are lighter than air, they use their tentacles not only for possible communication but also as a form of motation, swimming through the air.

HERBERT:

You have to have pretty dense air to do that.

SELLECK:

Yeah, there's a lot of oxygen up there, according to the book, though.

HERBERT:

All right, we'll think about that. We're already on the tentacle moving them somehow.

ELLISON:

We've got about six more minutes, so that means we can only take a few more people.

SILVERBERG:

Harlan? I would vote for moving Niven up a little closer in line to see what footnotes he wants to add to his own ideas.

ELLISON:

Larry? [Applause] Can we move Larry Niven up, so we can find out if he's got anything further to add?

HERBERT:

We were talking about an infrared hydrogen and—we were going that way—you know, the relationship between the creation of the hydrogen—

DISCH:

What do they eat?

SILVERBERG:

Well, they start as plants, at the moment.

HERBERT:

So they could continue to be plants. They could have a photosynthetic way of adapting to their indefinite life style.

ELLISON:

Does that satisfy you for the moment, Larry?

HERBERT:

Does that get it, Larry?

ELLISON:

Is okay? Okay.

LARRY NIVEN:

Two points. One, forget about helium. It isn't available in two senses. One, there isn't enough of it around—

HERBERT:

We've already forgotten, Larry.

NIVEN:

Okay. There hasn't been much attention paid to what the balloons eat.

HERBERT:

We debated this over dinner while *we* were eating and it bothered us.

NIVEN:

Lay it out for the people, because it's a rather important question because of the philosophies you've been laying out for the balloons.

SILVERBERG:

We had them, for a while, metabolizing hydrogen in some fashion, but we didn't go into it in any—

BERNARD BRANDT:

One of the things is the possibility that the balloons might be derived from octopi or mollusk-type of life in the sense that it would allow nervous systems; whereby, as far as we can tell, plants wouldn't.

HERBERT:

Plants have nervous systems.

BRANDT:

How complex?

HERBERT:

Well, not very complex, but we can go anywhere we want to. This is a new world.

STURGEON:

That's an interesting thought, though, that they were originated in the sea and became airborne creatures. I like that.

HERBERT:

That's what we're working on.

BRANDT:

Also, the possibility that they might start originally from the sea and go up and also be allowed to spread their microbes by that means. They might be amphibious. Another thing: the balloons might be able to develop intelligence by choosing wind patterns; by cooperating to hold together in colonies during the wind storms; and would have to learn to communicate anyhow. Also, this planet has a wide range of temperatures and climates that would allow various other species. One of the main reasons why there's only one form of intelligent life *here* is that it's outcompeted everything else. With different land areas in which only a certain group of species would exist, it would permit a number of intelligent—

HERBERT:

They wouldn't necessarily have collided.

UNIDENTIFIED No. 2:

You mentioned the balloons creating light patterns and strange noises. Assume that the fuxes are uncultured boors and don't consider them gods at all but consider them a culinary delicacy. They hunt the balloons, and as a defense mechanism the balloons create or develop hypnosis. Their civilization, with light and sound. Their civilization develops from forcing, after a time—

HERBERT:

Not a bad idea for an evolutionary point in their history, but—

UNIDENTIFIED No. 2:

Well, that's assuming that the fuxes can be hypnotized easily. Eventually, they develop the ability to make the same language. They create their own civilization by using the fuxes as working animals. The fuxes consider them far removed but all-powerful. When the men come, the men are also intelligent, but they're more to the fuxes' . . . ah . . .

HERBERT:

''Taste'' is the word you're looking for.

UNIDENTIFIED No. 3:

Well, I just wondered: if the balloons can leave the atmosphere, maybe that would be a way you could tie in earth. By someday having them come floating by Earth.

ALL:

No, no, no.

VICTOR KOMAN:

The exploded bags would liberate moisture and some acids and bases. And the other balloons might be able to come in and with their tendrils absorb some of that moisture for a sort of religious transubstantiation-type thing.

SILVERBERG:

Cannibalistic transubstantiation?

KOMAN:

More or less. You know, the drinking of your dead brother's water. [Laughter] And when the Earth people first arrive they don't know the balloons are sentient, perhaps, and they gather them all up in nets and use them to lift equipment and stuff.

DAN NICKOLL:

A couple of things. First of all, since the balloons are able to expel hydrogen, wouldn't they be able to get fire from the people from Earth and turn themselves into blowtorches? To fight the other balloons?

And second, since some of the first humans that usually go into an unexplored area are missionaries, wouldn't they be against the fuxes' cannibalism? And tell them that it's wrong to eat part of their own brothers?

SILVERBERG:

You're making a big assumption there: that we're going to have a bunch of 16th-century Spaniards in this 24th-century system.

ELLISON:

Thank you. We have to move on to the next one. This is Mike Hodel from KPFK; you hear him on *Hour 25*, now you can see what he actually looks like.

MIKE HODEL:

I was just going to say . . . it's strange to be looking at an audience . . . you people have posited a passive relationship between the balloons and the fuxes. Relatively passive.

SILVERBERG:

Detached, but very active.

HODEL:

This may be premature, or simplistic in which case to hell with it, but suppose the intrusion of an Earth colony into the ecology would cause an active combination of the two life forms essentially to throw out the intruders.

HERBERT:

We were debating that earlier. Whether they would band together to say, ''Let's get rid of the bastards'' . . .

—[BREAK]—

ELLISON:

As soon as this gentleman gets off the stage, we will begin . . . Thank you. All right, now we get to the money. What we're planning on doing, gentlemen, is putting together a book. We've already got the interest of two publishers, and what we propose is a book built around these specs and this painting which would be the cover. Each of you would write the story that we propose you outline to us now. I suppose we could open the book to the four people who did the specs; Hal Clement, Poul Anderson, Larry Niven and Frederik Pohl. [Applause]

First of all, let's talk a little mechanics. Are we going to do this as a novel? with alternate sections? Are you going to do it as short stories or novelettes in chronological order, progressing one from the other? Are you going to do it as random short stories around the general makeup of the planet? Who's got the idea? Tom?

DISCH:

I had a suggestion for sort of how to start building it up; which is to go around each of us, each giving our sense of a whole book, and then refining that a bit among ourselves, and then presenting individual segments out of that book or, if it turns out that it's segmentable in our first go-round—

HERBERT:

But Tom, our major problem now is not so much how we segment the book, as the thing we note in some of the things that are being said to us is that it lacks a place to go. We've been kind of nullifying each other by adding this point and subtracting that one.

DISCH:

Isn't it possible each of us has a notion for the basic drama that's set-able on this planet?

HERBERT:

Let's get at that first. Then we'll be able to cut it up, I think, a little easier. Why don't we just start and just cut it up as far as: What is the basic drama and where is it going? Just come right through us and I think that'll give us a picture of where we're going and what we're going to do.

ELLISON:

All right, I'll tell you what. Bob's been taking notes frantically, why don't we start at this end and work around, if that's amenable to all of you? Ted, is that okay with you?

SILVERBERG:

Okay. The basic, basic story—the very rock bottom thing—is that this situation that has evolved is that of the intrusion of Earthmen into a complex binary, alien society. And it seems obvious to me that what we're going to tell is a chronicle of interaction, disruption, metamorphosis, synthesis.

HERBERT:

Yeah, but the pieces of it are what we need to talk about.

SILVERBERG:

Yeah, but we've got to see where—what direction the pieces are. What I would think we'd have to do is follow a roughly chronological order, so that we move from first contact to ultimate synthesis in seven or eight phases. And the problem, of course, is that we won't know what the whole story is until we've told it. Until every hand in it has said his say. We cannot work from a fixed blueprint when, in fact, four of the minds involved in this aren't even up here.

STURGEON:

Could I speak a little out of turn? Would you mind very much? I happen to have been involved in teaching writing recently and these things happened to have been well boiled out and essential—in the sense of being of the essence. A story—not every story by any means, but a story—is essentially this: it's the narrative of a protagonist, male/female/what have you, who has a problem and travels through obstacles and solves the problem. But who is—if it's important fiction at all—who is changed. Irreversibly and permanently. He can die, he gains something, he loses something. He learns something that'll last him the rest of his life.

The other thing is, the protagonist has got to be somebody with whom the reader can identify, and care about. So, we start with a thing like this. And I intuitively feel that the structure might well be a series of such events, you see, done by each of us. And then an overriding narrative where, you know, the great god Kwong understands what his function is and so on.

SILVERBERG:

Each section is going to have to be a complete story, with the aspects of a story.

STURGEON:

Yes, but the interrelationship I wanted was a superstructure. Whereas, I say, the great god Kwong understands what his function is with living creatures.

HERBERT:

Okay. I've been asking myself: if I'm a member of a human party, intruding into this set-up, this system, what will I learn from my own mistakes? And one of the things I might learn is that we don't learn much from our mistakes. So that maybe the transmogrification we're looking at here is a place where humans really learn from their mistakes, because of the nature of the planet and its system into which they intrude.

STURGEON:

Good. And if that turns out to be an irreversible change, it'd be a beaut.

HERBERT:

It would, that's what I'm saying.

SILVERBERG:

Shall we assume that the Earthmen are there for a benevolent or at worse neutral reason?

DISCH:

I don't think so. I don't think Earthmen ever are. If I can—

SILVERBERG:

I'm not offering that. I just want to know what we're going to do.

HERBERT:

I think we ought to have them there because first contact found that there were a lot of goodies here. And of course we'll go in for benevolent reasons, we see that they are eating their young and some of those balloons dropped a few humans from twelve thousand feet, and there are all kinds of odd things going on here that we have to correct.

DISCH:

I don't think you should ever allow first contact stories to be about really stupid—I mean, to assume that the humans that make first contact never have the imagination that any science fiction reader does—

HERBERT:

I'm not assuming they're stupid, I'm assuming that because this is such a strange thing—absolutely out of any context that humans can associate with—that because of that, they make wrong assumptions. That's not necessarily stupidity.

SILVERBERG:

They make wrong assumptions, but are they there for evil purposes?

HERBERT:

I'm not saying they are there for evil purposes—

SILVERBERG:

Well, as I rotate this, I find myself hostile to the idea that we're just going to tell the conquest of North America all over again.

HERBERT:

Oh, no. No, I'm not on that trip at all—

SILVERBERG:

Okay. Then the same old imperialist crap does not have to enter, necessarily, into this. I'd gladly throw it out—

STURGEON:

Got to kick it out.

HERBERT:

Yeah. I think that there has to be something enormously attractive to get humans to this planet because of the very nature of its climate and the things that are wrong. You know, people get killed there. But something should be enormously attractive: a brand new experience. This planarian experience might be the thing—really a far-out trip to try to assimilate an entirely foreign culture without a language interaction. Without any communications basis. And while you might, by eating a fux, get a lot of new experiences, you wouldn't have anything to correlate them with. You wouldn't be able to assimilate them and put them into the context of that planet.

SILVERBERG:

Well then, we begin with explorers and we move in a series of generations to pilgrims.

HERBERT:

To pilgrims and to scientists, various people trying to understand it. Pilgrims . . . I see what you're saying, yeah.

STURGEON:

In successive waves to this planet.

SILVERBERG:

As it becomes apparent that there are biochemical-spiritual phenomena available by assimilating the life forms of this planet. This is something, of course, that can only be discovered after a lot of bad news, a lot of damaging, blundering interactions.

STURGEON:

One of the things that most delighted me—that most deeply delighted me—was in Roger Zelazny's story, "A Rose for Ecclesiastes", where he had a poet in the expedition to a planet who had a real function because he was a poet. That pleased me very much.

One thing I'd like to know, or kind of feel about this, this visitation or intrusion, whatever you call it. Would this be a first contact? Because it really makes a difference. If this is a first contact we don't need so many reasons to go there.

SILVERBERG:

Spell it out, Ted. What do you mean, "Would this be a first contact?"

STURGEON:

From Earth to this . . .

SILVERBERG:

Yeah, at some point there is a first contact—

STURGEON:

No, no. Is it the *first* alien species that represent—

SILVERBERG:

I see. I see. That's a good question. Yes.

STURGEON:

Because if it is, you see, we don't need reasons to see it, we just have to go there and investigate everything. If it is the seventh, or eighth, or fourteenth, then there have to be other reasons.

SILVERBERG:

I like the idea that this is the first encounter with alien life forms. Because otherwise we dilute the impact, we have a galaxy full of weird monsters. This way the focus is very intense on the one world. This is our first discovery of . . . extra-terrestrial life.

STURGEON:

And then we can get rid of all that crap—"it's the only place where they grow the x-tel seeds"—

HERBERT:

Right. And there's another thing going on here too. We could have people going to this planet for lots of reasons. The different interpretations of what the experience is. Some going for religious, some going because it's a wild trip, some to study it, that sort of thing.

DISCH:

I thought of one possible reason, that's suggested somewhere in here—in Fred Pohl's part, I think—where he talks about the possibilities for manufacturing because of so much available energy. He also says the first exploration would be done by machines. And also suggested that there be pilgrims. Well, combining all of that I thought that pilgrim robots might very well come there to manufacture themselves.

SILVERBERG:

And to elect a pope? [Laughter]

DISCH:

No, is it quite— In a sense, if they were like really human robots, they had fine sensibilities, they might be in a nice moral situation. And they would have a motive to be there. Both to be away from Earth and to be on this unpleasant and outlandish place.

HERBERT:

May I suggest that we have the basic elements of a divisive structure here? So that we can separate it. If people are there for different reasons we can, each of us, take a group that is there for a specific reason that suits us, you see what I'm saying? And then the synthesis becomes putting it all together and it spells mother, at the end, you know.

STURGEON:

Then, of course, there's the matter of feedback on Earth, which is a whole 'nother thing . . .

HERBERT:

Are you going to postulate a means of quick feedback getting to Earth? In other words feedback goes both ways, if we get the information back from this planet to Earth then from Earth back to this planet. Are you postulating a means of doing that within a time frame that allows it to be meaningful?

STURGEON:

Well, I'd like to. I mean, the convention of subspace radio or whatnot. I don't mind including—

HERBERT:

Or we could even borrow an idea from Ursula Le Guin if we wanted to.

STURGEON:

Yeah, right. Or use telepathy or something. But I don't mind using one of these impossibilities, just once. And I don't think the readers generally mind it either. But the interesting thing: then you have your waves of people coming for different reasons. The biologist, the entomologist, the ecologist, the ethnologist, and your pilgrims, your religious people.

SILVERBERG:

I think what has been offered us is one population of colonists sent there in deep sleep, evolving. I don't like it as much as this feedback, because I see more possibilities for conflict among the Earth population if it's not as homogenous.

STURGEON:

Because the other end of the thing is what's happening on Earth when these ideas start flooding in . . .

DISCH:

It's not necessarily a disadvantage to have a sort of delayed effect in the feedback thing, in that the situation on Earth would always be out of phase with the expectations the people have about . . . I mean, say generation A, on the planet, would be expecting an entirely different response from Earth than happens because history has intervened on Earth. And there might be a nice interplay between those expectations.

HERBERT:

What this would do to some Earth's religions, for example, as it came back.

DISCH:

Right.

SILVERBERG:

We haven't talked at all about the Earth that is sending out these explorers. And somebody's going to have to work that out before we begin.

HERBERT:

Okay. Could we get a quick reading on what each of us prefers as a reason for going there and the nucleus of a story?

ELLISON:

I get the feeling that you're all trying to cannibalize off one another.

STURGEON:

What made science fiction what it is today is incest and cannibalism. [Laughter]

HERBERT:

And you should be the last one to talk about this, Harlan! [Laughter]

SILVERBERG:

What we're doing is rotating this thing from mind to mind and adding an incrustation here and there so it makes some sense.

ELLISON:

Okay, I'll go for that for the moment. [Laughter]

SILVERBERG:

We've arrived at deciding what the basic motive for getting there is. And I would be inclined to return to the days of science fiction innocence and call it mere curiosity. Which involves postulating an Earth that is together enough to afford extra-galactic . . . well, maybe not extra-galactic, but certainly extra-solar expeditions. At the moment we can't even send a tin can to the moon because of our world-wide crises. But we will have reached some level of harmony on Earth that permits us the luxury.

HERBERT:

Or we could go for a technological breakthrough of some kind that allows it.

SILVERBERG:

Yeah, which would involve some relaxing of the mess we're in now. We leap over, in other words, the 20th century crises.

HERBERT:

I think what we can postulate is that the present conditions are cyclic, and that this, too, will pass away.

SILVERBERG:

Yeah. We're back to a new age of exploration.

STURGEON:

There are two ways to make it work. One of them is a little far-out, fantastic, namely a matter transmitter-type thing where people on Earth could travel the distance immediately. I don't like that. The way I see it, the way I would prefer it, is that people in deep sleep over a period of hundreds of years would make the trip. Dozens of years, anyhow.

They would make the trip physically and they'd be there and so on. However, information back would be instantaneous. Now, if information only could create such a breakthrough on Earth, that the expedition was then paid off—

HERBERT:

Then other expeditions would come up—

STURGEON:

But it wouldn't be a *thing*, it wouldn't be a seed they sent back or a new alloy or something like that or start a mining operation. It would not be physical, it would have to be informational.

HERBERT:

That fits with communications theory too, Ted, because information is infinite. While systems are finite.

STURGEON:

So the task would be to find that piece of information which could not have been discovered except for this expedition. And which, by its impact on Earth, makes Earth realize that the whole expedition paid off. Then, you see, they can start shipping out other bodies.

DISCH:

That's fine as a result but it doesn't—

STURGEON:

Excuse me, Tom, but it's a continuing thing.

DISCH:

They can't set out for that—

STURGEON:

Oh, no. I think exploration is enough to begin with.

HERBERT:

This is still a physical detail and I don't have a reading at all.

ELLISON:

Can I drop something in?

HERBERT:

Yeah.

ELLISON:

I'm reminded of the ravaging of the birds of the Everglades in the late 1800s, early 1900s where they went in and killed the egrets and all the other birds for plumage for ladies of fashion. Would fux furs be something?

DISCH:

No, no.

HERBERT:

Because you're postulating there—

DISCH:

That's exploitation. I like Bob's idea, which is to say, not a colonialist, imperialist saga, but for curiosity.

HERBERT:

—and because curiosity is valuable.

DISCH:

Yes, it is valuable but it has another element and I'm wondering—I—my sense of the space program, of Earth going into space, is of its being such a tenuous possibility because of the present wasting of resources—the industrial establishment required to mount an interstellar program would be so colossal. I like to imagine an Earth—well, curiosity implies an Earth in which philosophy, knowledge for its own sake, has a primary value. This in turn implies a culture in a state, to my mind, almost of resignation. Not a rich Earth. An Earth depleted. An Earth that is willing to waste its last industrial resources to obtain this knowledge. Just the way somebody who's sixty and hasn't read Proust yet is willing to spend the last few years of his life reading Proust. I mean, that the other planets represent a last awareness that's possible for the whole race.

HERBERT:

You're postulating a dying Earth, then . . .

SILVERBERG:

No, no, no. Not necessarily a dying Earth. A dying industrial society.

STURGEON:

A used-up Earth, at least.

SILVERBERG:

A post-industrial society growing out of a—

DISCH:

—that uses its industrial resources—

SILVERBERG:

—to enter a new phase—

HERBERT:

How are they going to sell this?

DISCH:

They don't have to sell it. Everybody wants it.

HERBERT:

Oh? Why? You have a world-wide consensus, is that what you're saying?

DISCH:

Enlightenment. Yeah.

STURGEON:

Yeah, I'm post-industrial, and I've gone out the other side of technology and I'm interested in my seed-corn.

HERBERT:

I see one basic fallacy in this.

STURGEON:

Now that you've got me interested in doing it—

HERBERT:

There's a basic fallacy in this, really it is a fallacy. That world government is a kind of will-o'-the-wisp, because if we ever got tightly tied to one control system, with all of the delay factors that come down . . . You know, an order is sent down, then it reverberates through the system, then you get a feedback up to the control. It's like driving a car down the road when you turn the wheel and then three minutes later the front wheels turn, you see. You're going to go into the ditch pretty soon. So if you're talking about a world government with that tight a control that it can put this together, it's going to be a very deadly type of system. Because it—

SILVERBERG:

Not necessarily, Frank. One of the really boring things about science fiction is that so much of these 27th centuries that we write about sound exactly like the 20th century with bigger fins on the spaceships. [Applause]

HERBERT:

Yeah, well that's what I'm talking about.

SILVERBERG:

Or even worse, they sound exactly like the 19th century with internal combustion. So, because I am so bored with that, I would like to leap to the postulation of a somewhat different society here, five hundred years from now. Not simply say, human nature is such; because human nature does modify to some extent. It certainly is going to be modified by the changes in natural resources that occur—

HERBERT:

Bob, I'm not talking about a change in human nature in that respect, or lack of it. I'm not talking about that at all. What I'm talking about is . . . I'll accept this idea if it isn't the whole planet.

SILVERBERG:

You're also talking about Kafka's "The Message from the Capital", that gets there four generations later. But technology is not necessarily dependent on depletion of resources. We're getting toward instantaneous communication which may eliminate the Kafka problem.

HERBERT:

No, it won't eliminate it in the sense of the reverberations in the system caused by information coming down into the system. Which is where the delay occurs. It doesn't occur in the control feedlines.

SILVERBERG:

There's going to be noise in the system, but that may not be operative in this. We can probably still get our expedition on.

HERBERT:

Could we get our heads together by accepting that we will do this if it isn't a world-wide thing? That it is a society on the world that decides that this is—

DISCH:

How about doing it this way? Saying who you could imagine a character from this world to be, I mean, a person. Rather than trying to map out a society, to try and envisage a single human possibility. And I suppose, in a sense, a character for the book.

HERBERT:

You mean a single character all through the book?

DISCH:

No, no. But a single representative Earthman who could make this trip. What would he be like as a specific individual coming out of this society?

STURGEON:

You're not for a moment suggesting that only one guy does it?

DISCH:

No, no, I'm not. I'm just saying that rather than talking about the vast dimensions of Earth's society, try and picture it out of a single skin.

HERBERT:

I think that would help us, but we have about a half hour yet and we really have not cut it up into manageable pieces that can be split among us. Maybe somebody has a better idea than mine. I'll go along with it. But is there an aspect of going to this planet, for whatever reasons under whatever conditions of motivation from Earth, that we will mutually accept? Is there a reason for taking your story to this planet with the person you're thinking about? Why would you go there? It goes along with what you're saying, Tom, with the prototype, but what—not, what is an acceptable prototype for all of us—but what is Bob's prototype, what's Ted's, what's yours?

STURGEON:

Well, this is why I asked at the onset if this is a first contact story.

HERBERT:

I think it's a damn good question, Ted, and I think it should be.

STURGEON:

—and if it is it eliminates an awful lot of commercialism and so on. And then that great intangible motivator: Because it's there.

ELLISON:

Excuse me. Kelly postulates that it's a well-settled colony by the time we reach this point, at any rate. I'm wondering if it's necessary to get hung up at that early stage.

SILVERBERG:

We have to know why we're there before we find out what happens.

HERBERT:

You know there may be a stage for the jacket picture where it's a well-settled colony, but the story doesn't have to start there.

ELLISON:

I understand, but I'm trying to get the knot unknotted.

STURGEON:

It could be chronological. Like Bob could write the arrival and—

DISCH:

I think we should write a pre-arrival story.

STURGEON:

And Frank could write settlement. And Tom could write development. And I would write relevance.

ELLISON:

There should be an arrival story.

DISCH:

That widowed fux notion. It's the pre-arrival story.

HERBERT:

You seem to like that. It'd make a good story.

DISCH:

I think it's a good story. I don't think it's one I'd be capable of writing, because it would bear the greatest burden of exposition with regard to—it'd be like the hardest part of Hal Clement, to create the physical parameters of the world.

HERBERT:

It may be the story that comes last.

ELLISON:

Why don't we leave that one for Hal or Poul? [Laughter]

HERBERT:

No, I think that this is the last story to be written. After all the others are there. You see, *that's* what I'm saying.

SILVERBERG:

We want to tell the story of a process of interpenetration of cultures. Even though at the beginning we don't know there are cultures there, we know there are creatures there. So we have to cover a span of time that allows us to discover a planet, observe its wildlife, discover that the wildlife is not just wildlife but an intelligent mammalian species. Further discover that the balloons in the sky are living creatures, living sentient creatures. Then either discover that there is a relationship between these two sets of creatures, or create that relationship ourselves through accidental maneuvers.

STURGEON:

Wina [Sturgeon] suggested that we discover these are great sources of hydrogen, which we rather need for power, and we use them for some time before we realize they're sentient. And we create such a situation between us and them, which is nice.

SILVERBERG:

Yeah, now we're consuming the angels.

HERBERT:

There's a reason that could be developed around a whole story, you see. And we still haven't cut it up . . .

SILVERBERG:

I'm trying right now. I'm listing stages.

DISCH:

Bob? Here's the whole thing about— We have to develop a history of this process. And your thing about the interpenetration of cultures, well, go to Toynbee and his notion of what happens when cultures interact, especially at key moments. The birth of a new culture inside the decaying hulk of the old culture. His picture of Christianity coming up like a seed out of the decaying Roman empire . . . What if this planet were, as it were, the seed; and the Earth was the Roman empire that this seed springs up out of. And by the contact, it isn't the Earth that's transformed—it's not the sort of human being—but they, as it were, bear the message that this planet needs. And it's this planet or its beings, its denizens, who have within themselves the potential of this new—

HERBERT:

You've moved to the synthesis stage of the process right now.

DISCH:

And you could reverse it, too. I mean, the interaction could work the other way.

SILVERBERG:

I think there should be a flow in each direction.

STURGEON:

Yes. I'm still tied up so much with this idea of a feedback to Earth, and that it be informational. And that it be worth it. I don't think that I can be prevented from using this story as a vehicle for something which has been obsessing me increasingly over the last couple of years. Something which I can't even describe. I can't even name it, but I can give you an idea of where it's at. You've all heard of feral children, who are brought up by animals in the jungle. Every once in a while they pick one up when he's twelve or thirteen years old. And there's one thing they all have in common no matter where in the world this happens—Brazil or India or Malaya or where—and that is that they can't be taught to speak. Bronowski brought this point up in *The Ascent of Man* when he said that as a child he learned to speak—he spoke only Polish—and since then English has become his language. He does not now know a word of Polish. So it wasn't the language, it was the linguistics, the ability to speak. The feral children could be taught to nod their heads and shake their heads and grunt affirmatively and make simple sentences. But the kind of lingual proficiency that we all have is absolutely closed to them. In astronomical terms—I should say space terms—

the window opens and the window closes. By the time a child is hours old, I suppose, until twenty to twenty-five months, maybe three years, something like that, the window is open. After that it closes.

HERBERT:

Ted? Could you postulate this happening to an entire culture?

STURGEON:

Now just hang on a second. My obsession is this: that in our culture and among our species there is a window which is open and we don't know when it's open. And there is something it opens to and we don't know what to put into it. And that window closes. And we have all gone through this experience where we know somewhere within us that window has opened and that window has closed. And we can't do it.

All right, on our planet, a guy in the process of learning the interaction between these species discovers what this stuff is that goes in the window when it is open, and relays that back to Earth. The effect on Earth is simply stupendous. For one thing, when you give it to the children when they are ready for it, it's like giving them *language* when they're ready for it—when they never had it before. It changes the whole aspect of the species. But it's a new thing; and a new window. What would happen if our children . . . we realize what this thing is and now we have a way to give it to the children. Initially we'd say of course we'll give it to the children; but supposing we give it to the children and we watch them grow up and they're different and/or superior to us.

HERBERT:

Childhood's End?

STURGEON:

Yeah. Would we start killing the children because of that? Would they make us insecure?

HERBERT:

Is this the story you want to write in this series?

STURGEON:

It seems to me that this is the vehicle for it. I've been looking for a vehicle for it.

HERBERT:

You want the whole thing to do that or do you want to do that story?

STURGEON:

No, I think that this is one of the things that happens. There are many things that can happen. I'm talking in terms of the feedback to Earth.

ELLISON:

Ted? Ted, let me ask you a question. What if it were an Earth child who was a feral child, somehow brought up by the fuxes?

SILVERBERG:

No, no. You're reducing Ted's metaphor to a specific plot gimmick. That's not what he's saying.

STURGEON:

No. I'm not talking about feral children but I'm talking about the window. I know it's there. I know as sure as I sit here it's there. But I don't know what it is.

ELLISON:

Bob, that isn't quite what I meant. What I meant was: what if the specific mechanism for the window opening and the information getting back to Earth be a child of the Terran colony who is somehow—

SILVERBERG:

I don't want to deal with the plot on that level of detail yet, because we don't have a plot fully congealed. What you've suddenly thrown at us, Ted, or maybe it's been here all along, is a double interaction, a double transformation. The plot that we're evolving would lead to transformations both of the Earth and at the Medean end. The transformation at the Medean end conceivably a disastrous one for the Medeans, though a benevolent one, a transcendental one for the Earth end, which is a hideous irony.

STURGEON:

It is indeed. It's like Clarke's "The Star".

SILVERBERG:

Yeah, yeah. So we would have a double plot line running. One an Earth line ascending, and one a Medean line descending.

STURGEON:

And also a sensitive human being who sees this coming and tries to stop it . . . on behalf of Medea.

SILVERBERG:

Well, trying to stop it has great consequences for Earth.

DISCH:

What we've got is the story of Prometheus, really. I mean, we've got a fire-bringer story.

SILVERBERG:

Well, not entirely, because Prometheus couldn't have benefited particularly from bringing fire.

DISCH:

In effect Prometheus is punished. You're imagining the ruination of Medea as a consequence of bearing the fire to Earth.

HERBERT:

You're saying, Medea is Prometheus?

DISCH:

Yeah. Or some element of Medea.

STURGEON:

Or for that matter, if we used this particular—or even if I used this particular thing of that open window that that would be the fire that is carried? That which goes into the open window?

DISCH:

Yeah, that's what I mean. Right.

STURGEON:

But that, of course, isn't the only narrative that can go. There are many narratives that go along. There's the matter of getting along on the planet, in this settlement, that's there in the background.

HERBERT:

We have a problem, though, of cutting this into many parts and having them be a coherent whole. Of having them come out somewhere. I like what—you're talking about synthesis there and I like the picture of the synthesis you're describing. But that is either a story about Earth and what happens as a result—it doesn't happen on Medea. It would all happen on Earth. I'm saying that these are the options open to us, not just one.

DISCH:

There's one possible model that exists and that's *A Canticle for Leibowitz*, an epitome of history done in separate sections in which the same basic moral event happens at a larger and larger scale from section to section.

HERBERT:

Yeah, but what new thing do we do if we take that as our model?

STURGEON:

Well, you see, there's a distinction in structure between a novel and a short story. A narrative—like the one I just told—is a thing that could be a short story or a novelette. A novel is structurally different, however, and it has a main thrust and a substructure which goes in a series of climaxes which contributes to and feeds back to the main theme.

HERBERT:

We come back to my unanswered question, though.

STURGEON:

Just a minute, I think that I've got it here . . . in that ideally we would produce a number of—providing we got our backgrounds straight and our—the time straight. Is it the time of the first man? Is it the time of the first settlement? When is it? And stuck rigorously to that background so that none of the stories would be mutually exclusive. At that point one of us, who would be a master synthesist, would look at all the stories, soak himself in them, and come up with a superplot, a superstructure, which would tie the whole thing together.

SILVERBERG:

No, Ted, no. You've got it upside down. I think we need a beginning and an end before we can start worrying about a middle.

ELLISON:

What you've essentially got is Jim Gunn's *The Listeners*, where one thing progresses into a final thing.

SILVERBERG:

I don't see how we can possibly work toward anything coherent unless there's already an existing direction.

HERBERT:

Right. And that's what I'm trying to get here. You see, Ted, I'm saying if you took your idea for the window—and call it ''The Window'', let's say—and then, it doesn't happen on Medea, it happens on Earth.

STURGEON:

It has to happen on Medea before the concept goes to Earth.

HERBERT:

No, I'm saying you could take that as given, that whatever opened the window already happened on Medea and now we have the story of the effect on Earth. You see what I'm saying?

STURGEON:

I hadn't even had the thought of going into that story because I don't know what the thing is. My story would be essentially—

HERBERT:

Our problem is a different one. You see, ours is to get a goal. We need a goal for this story and we don't have one so we can't cut it into pieces—

SILVERBERG:

We drifted into one earlier. Involving some relationship that's now beginning to blur in my mind, but it's on the tape, something that the Earthmen derive from the shared mystic experience of the soaring fuxes and the balloons. What this is is too inchoate for me to rattle off neat plot formulations this late at night, but that's what we were heading for before the intermission. And—

HERBERT:

May I say what I see here? I think I'm going right in your direction, Bob, I really do. Let's say that whatever happens in the first experience on this planet just kind of blows minds but no two groups interpret it the same way. The scientists have one view of it, the transcendental meditationists have one view of it, the religions have one view of it, and some people just want this great trip, you know, they want to go there and have this high.

STURGEON:

In a sense, it's the blind man and the elephant.

HERBERT:

Right, exactly. It's the blind man and the elephant story that I see.

SILVERBERG:

They find the elephant—

HERBERT:

They find the elephant and now we have all of these reasons for going there. We cut that into as many parts as we want. You see. All we do is: we have the elephant there and each of us takes one group, which has its reason: ''gee, you know we're going to get this trip,'' and they say ''it's like a wall,'' you see, and then the other group says ''no, no, it's a rope.'' And then we put it all together at the end and it spells mother and that's what I meant. We could come out with your transcendental experience at the end, you see. The window open—

DISCH:

No, I think the transcendental experience is like the basic thing that everybody's feeling a part of. For instance—

HERBERT:

Maybe I misinterpreted it, Tom, but I'm saying: Yes, there's a transcendental experience at the beginning but it is variously interpreted. Nobody says it's the same thing and different people go there out of their different interpretations and they see the elephant in different ways. But beyond that is another transcendental experience. Because anybody who says that a transcendental experience is the end-all and be-all, just, you know—

DISCH:

If we could say what the summary of all possible transcendental experiences are—

HERBERT:

I'm not getting into that trap and I never will.

SILVERBERG:

Each sighting of the elephant should advance our knowledge of the planet. Not eight parallel dithering explorations but something that is cunningly crafted to move the story forward.

HERBERT:

That's exactly what I'm talking about.

STURGEON:

Providing that I can convince you that my discovery of the wall and your discovery of the sink are the same thing.

DISCH:

For instance, I was going to say—while I perfectly understood what you were driving at—my own . . . what *I* was driving at, the thing about the sort of death-acceptance thing, could co-exist with that quite possibly as another part of the elephant. For instance, as you were talking about bringing back the fire, one of the ways that I turned that in my thinking of it was that, as is the nature with the fire, to me it's a fleeting thing. To me what is the most poignant about transcendent experience is that it's fleeting. It always has been. That, to me, is like an essential pathos in human existence. And I wouldn't want to let go of my sense of its poignancy. So my— The part of the elephant I would lay hold of wouldn't have quite the positive quality that I think you would give to it. Although it's my sense of the elephant.

HERBERT:

That is what makes a good story . . . when you put these things in tension.

STURGEON:

If I can convince him that my rope is the same thing as his wall . . . what's going to happen is that he's going to feel that his wall is diluted. And it becomes less transcendent. A horrible experience for him, I mean, the him that you're talking about.

HERBERT:

It'd make a hell of a story though.

ELLISON:

Hey, listen. I'm getting impatient. I'm getting impatient. I want to hear a story. [Applause] And I realize I'm really whipping it on you, I understand—

DISCH:

Okay. I'll tell you the one, because I have one in mind.

STURGEON:

Once upon a time . . .

DISCH:

—and it would be the pilgrim thing, because I like that. The pilgrim-robot thing. One of the things I like about the notion—and not robot or cyborg—the notion of somebody whose whole existence is consciously determined. Somebody whose sense of being behaviorally pre-conditioned is absolute. Phil Dick's constant concern with: ''I'm conscious and yet I know I'm simply a bunch of neurons firing in a predetermined order and that order is controlled by the laws of physics, etc.'' To me, this robot is a metaphor for the sense of being a creature subject entirely to physical law. It's a denial of spirituality. And it's one pole of human mental experience, basic experience. It's . . . All right, all right. Put such a person on this planet. He has, in every way that one can present it, writing from his point of view; not in the first person but through his point of view . . . He has every sensibility one could ask of even a Jamesian hero. But he doesn't understand that quality of human religion that is Christian. That can accept death and find in it a transcendent meaning. A reason for affirming his own annihilation. Well, all of those meanings right there—through the thing I was talking about before, the Phaëthon experience, the—through his awareness of these balloons—he would come to be able to affirm death. He would, as it were, be converted to Christianity, to an acceptance of his personal ending. And an apotheosis of a double death, the balloon and himself at the end. That would be the story. [Applause]

ELLISON:

Now you know, when you tell that, the applause is sporadic because people are saying, "What?" [To the audience:] No, that's the difference between your [the audience's] head and his head. At the moment that story is written, he knows where it's going to go.

DISCH:

It's writable.

ELLISON:

Yeah, it's writable. The linkages are being made, now that he has set himself the chore. And that's the skeleton of the chore. Now comes everything that surrounds it.

DISCH:

In a sense it's the Tin Woodman in Oz, really. [Laughter]

ELLISON:

Okay. Bob? You're resisting me tonight.

SILVERBERG:

Actually, I'm uncomfortable with the whole concept of stories written by committees. But— [Applause]

ELLISON:

Well, it's maybe not the best of all possible worlds, but it's the world we have tonight.

SILVERBERG:

Well, okay. What I'm drawn to in this blue book is the geography. What I would want to use is the sense of the very terrain. Running from that high hot sacred place at the center, to that low misty cool foggy place at the shore, with all the intervening environments. That fascinates me. I've worked with that kind of spectrum before and I would very gladly use this ready-made one here. What I would have to lay over it, before I could create a story out of a travelogue, is my place in the totality of the overlying structure that we didn't quite put together . . .

HERBERT:

A particular map of hell.

SILVERBERG:

Yes, a particular map of hell. I would want to take a character from the coast to the center for a reason that moved my section of the story beyond that which I inherited from my predecessors. And by transforming that character, through his adventure, give the story a thrust into the future, into the future of the project. I can't be more specific than that. You see, what I've come up with is essentially the same structure as Tom. Tom, quite beautifully, managed to find a character to focus this into.

ELLISON:

There's something interesting me here. If this were Gordy Dickson or Poul Anderson doing this, I would have the feeling that we would wind up with something like a—either a militaristic culture intruding on a peaceful culture, or there would be something-about-Jeremy-Bentham kind of philosophy. But each of you in your way have moved toward an almost religious motif. There seems to be something about this world, about the interrelation between the species . . .

SILVERBERG:

Maybe about these four writers.

ELLISON:

Well, I don't know—

DISCH:

I was going to say that at some point Frank was saying something that—Could you imagine yourself going there? Because what I think we're going to write is our sense of our self there. That's finally what a story is, you imagine yourself able to do a certain action. So, in a sense, any character you put forth is somehow the transfigure of your own sense of yourself.

STURGEON:

That's the identification that makes good literature. When the writer can't identify, then you don't have anything.

HERBERT:

All right. I probably have a split personality because I see a story with this kind of structure. But a particular piece of a whole, not subtracting from them and adding to what each of you has said. I see two people coming out together. One, the pragmatic scientist who is going to crack this problem—

ELLISON:

Male or female, Frank?

HERBERT:

I don't care. You know, for various reasons in the plot structure it could be anything. It could be neuter. And maybe it's an unimportant question three hundred years from now. The second person would be a mystic, maybe a poet-mystic. And they would be diametrically opposed in what they were doing, and yet somehow in the story each would be translated into something of the other.

STURGEON:

The story of a human synthesis, which is always a fascinating story. Great love stories are like that, and the stories of the scientist learning religion and the priest learning science and whatnot. These things are always fascinating and I think you're on very solid ground with that.

HERBERT:

That's the story I see here.

SILVERBERG:

You would have two humans travelling together. I would have a human and a fux. I'm writing a different story, I mean, I'm not correcting you there.

ELLISON:

There's your neuter. Because after the fux has dropped its posterior . . . [Laughter]

DISCH:

But parenthesis, the planet has an absolutely natural magnetic attraction to anyone who's had a sex change. [Laughter]

ELLISON:

Oh, ho, *Now* we're getting some interesting things here.

DISCH:

Because of the fuxes, right?

SILVERBERG:

This would have to be— Incidentally, I really abhor the term we inherited here, of *fux*. It's a cute pun but it's an anglo-centric pun and I think a dumb one. [Applause] The word I've been using has been *fox*, for lack of anything better.

STURGEON:

I agree with you. He said that at dinner and it suddenly hit me in a flash how thoroughly I agreed with him.

SILVERBERG:

A human and one of these mammals—it would be a male mammal taking the journey, because the females have biological responsibilities that would prevent them from the luxury of any prolonged journey. [Hisses] No, that's not sexism. I've been handed creatures that metamorphose over a short fifteen-year life span and the specs in here show the females devoting the first ten years of their lives as females to arriving at maturity and going through these two droppings of legs and becoming males. The males then going through a period of wild copulation and in the final years of their lives, losing all sex. So don't hiss at me, hiss at whoever.

ELLISON:

Was that Niven?

SILVERBERG:

I don't know who did it. I don't think it's evil. By def— This is an interesting biological metamorphosis. One that I've never encountered before. [Laughter] It would have to be one of these de-sexed creatures that has gone through— Actually, I can cancel all those hisses, it's somebody who has been through the female cycle and the male cycle and now has the time to be of neither sex and can be a guide. The Earthman, of course, perhaps beginning the story not even realizing that these creatures are intelligent enough to guide him. And an interaction between the two species, between the man and the landscape. Beyond that I'm not prepared to go at this point. [Applause]

STURGEON:

Such a fux might be able to give some beautifully detached advice to the human on his own sexual hangups. [Laughter] I mean, having been both places and neuter himself. No, really, I'm serious. It could be beautiful. So beautifully detached. Just that great eternal why.

ELLISON:

I don't want to press you any further. I think we've gone, perhaps, as far as we can go tonight. It's a little unfair to ask you to create on order but I think you've comported yourselves well.

SILVERBERG:

Well, we have a book.

ELLISON:

Oh yeah, we have a book. We're not quite done yet. I just want to say one thing: periodically in the audience I hear hisses when something is said that sounds as though it might be vaguely sexist or vaguely racist or something. And one of the things, it seems to me, that it is a writer's obligation to do—it's a very difficult thing to do—is to resist fads. Now, we've come in speculative fiction to understand that for the first thirty-some years of this commercial field, it was a very sexist kind of fiction. The heroes were all male and the stories were all male-oriented and women—

HERBERT:

The heroes were all Boy Scouts.

ELLISON:

Yeah, the heroes were Boy Scouts. They were no more men than, I suppose, Redford is in some of his films. They're all kind of Boy Scouts. But I urge all of you out there, since we're dealing with imagination in this class and since the idea is to open your brains—that those of you who are newly liberated—twenty minutes ago—learn the nature of the enemy. And understand that a remark such as Bob's is based on given data, given information. And while it may go against whatever current cultural ideas you have about sexism or racism or whatever it may be, there are some things that you deal with on the face of it just as they are given.

SILVERBERG:

Simply, it is not a *cultural* idea that the females bear the children. [Applause and laughter]

ELLISON:

I don't think I said that but that's okay.

HERBERT:

I'd like to stay away from these damnable gags about *vive la différence*, you know, the thing we're dealing with are actually physical differences here on Earth. And we're postulating even weirder physical differences on a planet. And Ted's opinion here, I second wholeheartedly, that when you get these differences they cast light on your own understandings. I hesitate to say hangups because I think they're just phases.

STURGEON:

That's the symbolism of the feedback to Earth. It's exactly that. I would like to make an observation on something Harlan said, though, and it's one of the most fascinating developments and I've been in a position to see it. I have as of very recently quit the book-reviewing business because I found I was spending two-thirds of my time on other people's work instead of my own. But for the past three years or so I have been exposed to about three hundred books a year, and my inputs are just jammed full, but I do see trends. And one of the most fascinating trends of all—Harlan put his finger smack on it—about what happened here tonight. He said it's getting all kinds of religious here, and philosophical, and so on. I have no way of describing to you how many . . . what a large percentage of new work is coming and it's coming from beginning writers and it's coming from the old hands who are evolving in their own particular ways. The overall preoccupation is with alternate realities and with the nature of reality itself. And with what goes on inside what somebody once called a wrinkled jelly. There's a turning away from outer space and into inner space. I have a feeling that this is a cultural thing. I think we've reached the—to quote a book title: *The Limits of Growth*. But we can't stop the momentum of growth. Therefore, I believe we're turning inward. Some of us are escaping that way. I think that's a little unfortunate . . .

HERBERT:

Ted, I disagree with you. I don't think there's a limit of communication's intellectual growth.

STURGEON:

Well, possibly so. But the point I'm making is that it isn't more guys with more screwdrivers. It's something that's turning inward. It's an expansion. It's a discovery, as I say, that there is more room in inner space than in outer space. And this isn't just an idea of mine. You laid your finger right smack on it when you said all four of us seemed to be doing that. Not all four of us, friend. I mean, all the beginning writers, the short story writers, the collectors, the anthologists, everybody.

DISCH:

To grab hold of another part of this element/elephant, though. The distinction between inner and outer space, I mean the science fiction that I do read that is about physical events, is only interesting as fiction—as an experience that's happening in my head—because it has reverberations to the inner world. And I think Frank is the perfect case in point, of adventure that's wholly allegorized, at its best. I mean, the complete dissolution of inner and outer events; and that's always been what fiction could do. That's what art does, it makes physical objects that have a spiritual dimension.

HERBERT:

Hear the man very carefully, because this is the difference between radio, the written word, and film. Film, you roll it through the same way every time. And with words and radio you can . . . you play the images in the head. And you can play many more images in the head, much more dramatically, much differently, you have many more variations than you do when you fix it, when you lock it down into an inexorable form. The example I like to use is the example of Allen's Alley and Jerry Colonna coming back and Allen says, ''Where've you been?'' And Jerry says, ''I've been to India.'' Allen says, ''Did you learn any new tricks?'' Colonna says, ''Oh, yes. I learned a marvelous trick. Watch carefully, I lift my left foot. See, first I lift my left foot? Now I lift my right foot.'' And I swear to you there was the longest dead air ever to exist on radio. You thought something'd gone wrong with the station. And then there was this distant echo-box voice that says, ''Well, don't just stand there! Somebody get me down!'' [Laughter] Well, try to translate that into real pictures. It just goes dead. You can't do it.

STURGEON:

My perfect example of that is, given these two media, radio and television . . . and I give you one line: The most beautiful girl in the world stood in the doorway.

HERBERT:

She's all yours.

ELLISON:

She's right there. Listen, we're going to knock this off. Can we have a big hand for these people, please? [Applause]

PART III:

THE EXTRAPOLATIONS
THE QUESTIONS

EDITOR'S NOTE

On the evening of 15 April 1975, as the seminar began, questions and suggestions as to possible developments for stories about Medea were solicited from the large audience assembled in the Grand Ballroom of the Ackerman Student Union of UCLA. These were written out and deposited in collection bins placed around the ballroom for that purpose. The slips of paper with their extrapolations were gathered during a break, and the best of them were read to the panel for platform consideration. Many of the suggestions found their way into the stories. And so, as we sought to convey a rough idea of how the creative act is sparked, the audience became one with the authors in this book, and they, too, "invented" Medea. All but the very few silly questions have been preserved here, with the names of the participants indicated.

THE AUDIENCE

After the ''Explosion'' of the Balloons (because of lightning) the consumption of their ''Protoplast'' by the concept of the ''Sin Eater'' would guarantee their passage to ''Heaven.''

DANIEL OWEN
Inglewood, California

Balloons got hydrogen to replenish themselves by taking fuxes up—decrease of pressure causes release of gas that has been formed in an organ in the fuxes' bodies—thus the balloons are constantly dependent on the fuxes. Fuxes in turn take a bit or two of balloon which increases them genetically.

VIRGINIA RAWAK
Santa Monica, California

How about doing something with the picture? The girl and the balloons? Maybe a story about earth women and how they relate to the balloons and fuxes. In that picture, the earth woman seems to be on the point of communicating with the balloon and possibly the fux. Maybe the balloon is female, also, thereby making a triad of femininity?

ROSALIND A. HARPER
Long Beach, California

If, as I suggested, the death of the balloons provides new genetic material for the race of fuxes, that would certainly be reason enough to wax philosophic over the randomness of death in an immortal race. ''Our occasional death raises the consciousness of the entire race.''

BARRY WRIGHT
Los Angeles, California

Balloons die by lightning, but seldom; but when it happens, it would have to trigger some kind of reproduction to maintain the population.

VIRGINIA RAWAK
Santa Monica, California

With regard to food. Since food's main purpose is to provide energy, the balloons would not necessarily need to ingest food. They could slowly combine H_2 to O_2 to release energy to water. This could be done with enzymes.

To get material to rebuild cells, the idea proposed earlier of ingesting the remains of a burst balloon would provide enough material.

RICHARD GAYLE
Houston, Texas

According to the specs, there is a minimal ozone layer, and *heavy* particle radiation, solar flares, etc. Thus: rapid rate of mutation—thus: a long-standing cultural pattern is very nearly impossible.

LESLIE REGIS
La Verne, California

Conflict: The random lightning death is holy.

Humans teach them to form their shape into "hang-gliders" (or whatever) which avoids dissolution.

Thus: Hang-glider transformation becomes *Heresy*.

BILL CLAMSON
Santa Monica, California

Question: If balloons are subsequently killed by human broadcast power, the fuxes would at first consider the humans to be beneficial as increasing the supply of "manna"; but as the numbers of balloons began to diminish drastically the role of humans would be changed to that of, say, genocides or even antichrists.

LARRY E. BYERS
Los Angeles, California

Let's have the balloonists' metabolism in using solar flare energy to separate oxygen for life and hydrogen for flight create a by-product (enzyme or gas) essential to man in solving some pressing earthside problem such as cancer. This by-product could be essential to the balloonists' survival as well. The fuxes, who eat balloons during low solar flare activity, could also need this by-product in their reproductive capacity for completing the change from female to male. This balloon by-product gives man a reason for being on this stinkpot of a world, cropping the balloons, and creates conflict between man and fux. Then man learns balloons are sentient and that makes conflict between man and man. Need vs. humanity.

NORMA SAKIMOTO
Gardena, California

Fux priest turned messiah attempts to stop a schism that he knows will result in a holy war. His attempt results in a second schism that is attacked by both factions and is exterminated. This would delay the war of the first two schisms for a short period.

Initial contact physical scientist second ''wave'' of anthropologists.

Conflict between the two goals and the limited resources.

Fux priest receives support from a particular group of balloons and his defeat is a result of the dispersal of the balloon group by a freak weather condition.

GUY JENKINS
Los Angeles, California

If fuxes eat fuxes (and balloons) they achieve a collective intelligence? How is this limited by *human* intervention?

MICHAEL A. LOVELAND
Los Angeles, California

Make the two forms actually two phases of one life cycle. They are unaware that they are related: One (fux-like) are workers—other (balloons) are spiritual phase.

ANN DELANEY
Hermosa Beach, California

On the life cycle of the balloons—

If the center of the heated side is where the air rises, then this is where the rain would occur. Rising air—condensation—rain. The weather (rain) is used as a transport medium for sperm and egg of the balloons. The fertilized egg would then run into the ocean via the rivers formed by rain. The egg would then grow into the water form and from there grow into the mature balloon form.

PAUL JENZEN
Gardena, California

Problem: Free H_2 from balloons in atmosphere. Why not have some sort of enzymatic reaction (possibly necessary to metabolism) which recombines escaping H_2 with O or O_2—then excreted, valve arrangement no longer necessary. Example: Anabolic process is electrolytic breakdown (possibly enzymatic) of H_2O—Catabolic process is recombination of free H_2 and O.

JAMES KARNS
Westlake Village, California

Are your balloons intelligent? If so, they *have* to be evolved from predators. (Eat pond-life, small animals—?)

How about when a balloon picks up a fux, it is not for any other reason than *lunch*. Only the bones come back . . . ?

DAVID GERROLD

As the story starts it is multi-leveled. That is, coming from three different points of view: fuxes (basic gut level); balloons (metaphysical); and earth's new arrivals, who are oblivious to the *complex* system of Medea and are mostly interested in getting what they want *fast* and getting off this "planet."

MORGAN
Los Angeles, California

Balloons go into cold areas for a time of suspended animation (meditation?).

BRUCE MENSINGER

Why not create a hostile relationship between the balloons and the fuxes? It would be more natural for the fuxes to resent the balloons, and see them as free from the terrestrial constraints and competition they go through. Then the fuxes eating the balloons would make sense; and man could come into the system and either bring the two species together or blow them completely apart.

DOMINIQUE PAHLAVAN
Los Angeles, California

Climate specialists of balloons supreme in balloon society. Predict life and death. When lightning strikes and where the wind will carry the colony. When Terrans come their weather experts prove at least as accurate as the balloon experts. The balloon experts try to war with humans to keep social position.

JIM COWAN
Milwaukee, Wisconsin

What are the sort of people who will be going over?

Balloons are derived from octopi (with nervous systems).

Balloons develop intelligence by choosing wind patterns by cooperating to hold together in colonies during the wind storms and would have to learn to communicate.

This planet has a wide range of temperature/climate. It would have different intelligent species in the different climates.

These balloon-beings are perhaps the only creatures that can span the eco-systems.

Think of a story done on the life of one of these balloons.

BERNARD F. BRANDT
Manhattan Beach, California

Perhaps the balloons are attracted to the fires of the human colony in order to experience self-immolation.

CHAZ SCHLINDWEIN
Caltech
Pasadena, California

Relation between balloons and foxes—Balloons pick up foxes to obtain *hydrogen* which foxes give off as metabolic waste products. To foxes, this is a religious type experience.

Foxes worship balloons because of their sphere shapes. Also, in consuming "burst" balloons—their intelligence is "refreshed."

Balloons worship the aurora and lightning because they can bring death—which is a *positive* experience in their philosophy.

Man-jarring influence that disturbs this symbiotic balance—Foxes and balloons will both compete for and fear man.

Man has rockets—"lightning" exhaust and hydrogen (fuel).

Balloons worship this. No longer need foxes. Foxes rejected and begin attacking balloons.

KAREN MILLS
Claremont, California

After the colony is settled, there could be a "rite of passage" for a person to become a full member of society. (The planet is very dangerous.) This rite could duplicate the journey of a pioneer settler who did something heroic.

Also, if the society is split into conservative and liberal (natural and test-tube?) factions, the rite of passage could become political, with an opposing group trying to sabotage the rite of an offspring of a leader of the other group.

MARTIN COHEN
Los Angeles, California

What about the skin of the balloons. Something like a cell in which it could absorb gases (and whatever food) out of the air and also control the inflow and outflow of gases which could cause change of color. What about marine life?

MARC DERDEN
El Segundo, California

Have balloons evolve on the dark side of planet and migrate!!!

DRAKE LETCHER
El Segundo, California

Human beings pop things by nature. Kids shoot out street lights, pop pop-weed, seaweed, pimple—anything that doesn't fight back. Popping these balloons would be more fun than exploding H_2 bubbles in chem lab in high school. People did this a lot, for fun, when they just arrived. How does the balloon society react?

KEN YAPKOWITZ
Los Angeles, California

The intruders (us), being class oriented because of their own culture, immediately seek in their colonization efforts an available labor force—obviously the fuxes, thus threatening the pre-existing symbiotic relationship between the fuxes and the balloons. It would therefore take considerable strategic analysis in regrouping before the intruders could be successfully or unsuccessfully coped with.

JESSE JACOBSON
Tarzana, California

I do not believe that the balloons would develop intelligence on their own under the circumstances. Therefore I would like to suggest that they are artificially created intelligences, created by some race with vastly superior technology. They might have been created for esthetic reasons, which would explain their physical beauty and variety as well as their philosophic bent. The creator race would have eventually lost interest and abandoned the balloons. If the balloons are aware of their artificial creation and abandonment it would form the basis for their religious system. They are probably an older race than the fuxes.

JUDITH PAUL
Claremont, California

Why should the balloons be deities? Why not *pollinators* of the *Fuxes*? Males' feces contain sperm; balloons eat feces; females prey on *balloons*. The Fuxes have hands, and yet the one we're shown carries a spear and *had to be given a communicator by the Earth colonists*. Are they this primitive? Even given a shorter lifespan, time & technology are relative, right?

If the balloons have tentacles which are useful, couldn't they hold onto something to combat a "wrong-way" mind? They need not be slaves or migrants.

If balloons come from plankton-eating environment, could they switch to insects once in the air?

D. PAUL BADERTSHER
Sherman Oaks, California

What if: the appearance of humans is the *end* of the story—a climax in which either the balloons or the humans will be destroyed.

The humans do not know it but the fuxes are a recent creation of the balloons for the purpose of expelling the humans from the system.

The humans not only visibly disturb the ecology of the system and affect the sensibilities of the fuxes, but are also disturbing the thought-processes of the balloons and affecting their viability as a life form.

RICHARD L. VOLLORIA
Santa Monica, California

Fuxes can have written language and therefore fairly sophisticated scientific concepts (pure astronomy, math, etc.). The balloons communicate by half-assed telepathy and ingestion of RNA-type stuff (their equivalent) therefore have pretty poor ability to correct mistaken hypotheses. A hypothesis accepted by a lot of balloons perpetuates itself better than a correct idea held by one genius.

DAVE OSTROFF
Topanga, California

The "fuxes" are beholden to the balloons because the balloons control the "weather" with their power to expel the necessary gases and chemicals.

MARILYN RYBACK
Northridge, California

The balloonists and the fuxes are unable to communicate with each other and it is only the appearance and aid to the indigenous species that the humans provide that makes communications possible.

KEN R. GREGG, JR.
Long Beach, California

The balloons spend most of their time in large flocks. They stay together by holding tentacles or by extruding filaments (as spiders do) to form an interconnecting web. Occasionally a balloon breaks free and floats alone until it rejoins a flock.

Balloons are killed only rarely by lightning. However, the earth colony broadcast power system is deadly to them. Whole flocks are wiped out by the beams (either by explosion or by radiation damage); the fuxes are angry at the earthmen for destroying their gods and begin a war.

STEPHEN BAYLISS
Los Angeles, California

Since the fuxes have to survive two egg-laying stages before they become males, there would be relatively few males around.

If reproduction is by ingestion—each female needs two males (or maybe just one)—therefore lots of frustrated females with no males. Are the unfertilized sections dropped anyway? What happens to the females guarding them?

Fuxes live faster, reproduce faster, would have a faster adaptation rate to changing conditions, particularly if a non-negligible number of mutations occur frequently. These are no problem until Earthmen have been there awhile—when the fuxes are quickly adapting to the new environment the Earthmen create.

MELINDA SHERBRING
Hawthorne, California

To: Mr. Silverberg: You established the fact that the foxes reproduce via losing parts of their posterior. This gives us two new species per fox. How in fact can we account for natural disaster, attrition or war, without the population decreasing to extinction?

PAUL LAWLER
Woodland Hills, California

Frank Herbert discussed gasbags being hit by lightning as a religious experience. Earthmen arriving on the planet could construct some weather control device, as simple as a lightning rod, which would constitute sacrilege of gasbag religious rites.

BILL GIACKETSIS
Las Vegas, Nevada

As an angle for a plot, how about this? The earth people, just after landing accidentally, consume a fox and reproduce an offspring, thus unbalancing the ecology of the planet and causing catastrophe.

STEVE REDDING
Van Nuys, California

Why not make the balloons telepathic? They're supposed to be highly sentient and very advanced intellectually; would it be logical to form some type of rapport with their ''fuxe'' children? Why not also make physical contact necessary for such a rapport?

MICHAEL VILAIN
Van Nuys, California

The fuxes are predatory. The one standing on the bluff appears as an armed shepherd watching his herd of balloons. He is in communication with his wrist transmitter to the flying version of the fuxes, who are the herders of the balloons; the balloons, although extremely superior in intelligence, are totally handicapped by lack of physical skill (no weapons, etc.). The arrival of earthlings is their hope—and a union is formed to fight the despotic fuxes.

DONALD S. MART
Beverly Hills, California

If, there is one balloon associated with a group of fuxes; AND *IF,* the humans are an interface between fuxes and balloons, and the fuxes haven't really considered the balloons sentient, and the humans act as the means by which the fuxes accept the balloons as intelligent, HOW ABOUT THIS AS THE ''FIRST CONTACT'':

An anthropological type (human) lives with a group of fuxes, and in order to be accepted into Fux society must be picked up by that fux-group's balloon. He's picked up, and comes to the realization (telepathically??) that the balloons are intelligent.

(Naturally, humans would study the land-based fuxes long before considering the balloons.)

BRENT WILCOX
Rancho Santa Fe, California

Perhaps the balloons could represent an evolution from of development of the fuxes, making them, in this sense, the "philosophers" you spoke of. The creation of a balloon could be dependent upon the death of a fuxe, an "afterlife." This could occur only with a limited number of fuxes, though.

Also, the mating or reproductive ritual that occurs with the short-lived males and active females could produce/yield an energy that provides the source for electrolysis and hence H_2–O_2 atmosphere. This ritual would of course occur in a lake, pond, etc. presuming such things could exist.

JOSEPH JARBUS
Granada Hills, California

Item: Why earthling intervention? Item: Why couldn't the fuxes look upon the balloons as man has looked upon supposed lower life forms on earth?

Item: I love you—Ted & Bob & Harlan!

Item: Why not evolutionary elevation of the balloons towards heaven—freak accident when no lightning brings "death", and "The Chosen Balloon" is observed by beings from a neighboring sphere/planet—not Earth, please.

SANDRA WARREN
Hollywood, California

Several things: I assume the wings of fuxes are fixed, okay? The balloons lift them up (filling their fux with pollen), point them in the direction of the ocean, and let them go. (The ones they use are sickly, offered as a sacrifice by the fuxes to their gas-filled gods.) I hate to be negative, but what good is a hang-gliding balloon? If it lands, then what? Fuxes pick it up and "grok" it (balloon soup)?

ALAN WINSTON
Pacific Palisades, California

When earth "men" arrive and use their lights to grow edible crops for themselves, the balloons interpret the colored lights as communication. But the lights, as stated in the specs, are hazardous to the balloons, and unstable kamikaze balloonists destroy themselves in ecstasy.

KATHY MARKS
Los Angeles, California

Have you considered a planet with dark and light sides? The story could be evolved into a story similar to Zelazny's *Jack of Shadows*.

JIM KARNS
Westlake Village, California

How about the flagella on the balloon being utilized as a rudder system so that they have more control of their mobility other than the air currents?

ELIZABETH M. IRVIN
Los Angeles, California

No plants have been seriously discussed. If metabolic rates are as fast as has been indicated, assuming that plants are an easier prey than animals, then plant life in general would have a greater need for intelligence in order to survive. Thus the floating bubble creatures and possible other intelligent plants would be better adapted to survive. The balloons could develop flight to escape aquatic predators in the Ring Sea.

RICK SHIELL
Pacific Palisades, California

Points from the picture: All of the balloon creatures are seen in groups (schools?) *except* the one that appears to be hovering near the human. Perhaps this balloon creature is investigating the human on behalf of its ''school'' (tribe?).

The balloon creatures have no visible organs for sight or hearing. They have fur. They are subject, due to their ranging over the planet (remember the winds?) to extreme temperatures and wind forces, so their sense of ''touch'' had better not be too sensitive.

The balloons are in the ''air'' all the time, and though the air can be violent, it is not solid. So ''lifting'' the fuxes (by going under them—the fuxes have those nifty appendages and can hang on by *surrounding* the balloons) will provide the balloons with a unique form of stimulation—so much for what the balloons get out of the relationship.

The fuxes have spears—spears can puncture balloons. Another unique ''sensation.''

DAVE CROCKER
Los Angeles, California

As humans appear on Medea, they will want to control or protect themselves against lightning. Even if there is no communication between balloons & humans, the balloons will see that the intruders have controlled the randomness. How would this affect their culture? How would it affect any relationships between fuxes and balloons? Would they flock to be martyred? If too many balloons were available to eat—how would that affect the racial intelligence of the fuxes?

VANCE JOHNSON
Los Angeles, California

Could balloons use gliding fuxes to determine wind currents, temperature gradients, etc. by watching flight from high altitudes (motive for lifting and dropping)? What if humans give/sell to balloons artificial aids and instruments? Effect on Fux religion?

IAN MYLES SLATER
Pacific Palisades, California

Consider: Because the balloon's culture is based on pleasure which results in lots of sperm and ova, therefore gametes, there will be too many new balloons for an immortal culture unless there is lots of lightning. (Hope that solves the hydrogen/lightning.)

A mountainous formation was mentioned, caused by tidal movement. It was described as having a very hot peak. I think this should be the religious center of the culture—the balloons could go there to release themselves from their physical state if they have survived the lightning. Or—it could be a sacrificial site or some sort of rite of passage.

BETH FELLER
West Covina, California

Situation: Human's rocketship exhaust ignites and destroys balloons, so you get a Christ-killer thing going between fuxes and men.

HARRIET GOLDWARE-SORKIN
Van Nuys, California

Can fuxe survive lightning if lightning strikes it in mid-air? Does Fuxe have electrical field (like cat's fur) that could protect the balloon carrying it during a dry, heat-lightning storm?

ELLERY S. SORKIN
Van Nuys, California

Say the balloons are *very* intelligent. They could communicate with one another through telepathy. They could also see fuxes as interesting creatures, fun to look at and study (as we do with some animals). The reason the balloons pick up fuxes could be that they like to drop them and watch them glide as a sport or form of art. This could also be an ego trip for the fuxes, who try to be as artistic and inventive in their gliding as possible. After all, it's a great honor to be picked up.

JULIE HARRIS
Chatsworth, California

Suggestion: Reason the balloons lift the fuxes up—the balloons gain sustenance by consuming the fuxes' energy through their (the balloons') tentacles. The fuxes are left weak and only semi-conscious, suffering consequent hallucinatory states they interpret as religious.

JOCELYN JACKS
Los Angeles, California

The Earth people affect the small group of centeroids that they meet. They become atheists and thus repugnant to other social groups of centeroids.

ALAN SINDER
Encino, California

I only wonder what the creature-type creatures think of the fuxes and balloonists. Humans would probably interface between fuxes and balloonists for their own reasons. Given the energy-rich system and *very* active ecosystem there would probably be a very high mutation rate amongst balloonists. If the balloonists picked up fuxes it would probably be for sensual gratification.

FRANK GASPERIK
West Los Angeles, California

The sperm and ova of the balloons drift to the ground and take root. As the plants grow, they acquire hydrogen (from the ground?). When they have enough of a root system the portion of the plant above-ground detaches itself from the underground part and drifts upward. (Sort of the way the fuxes reproduce.) Once in the air, the roots continue to draw nourishment.

ELONKA DUNIN
Los Angeles, California

Though there are storms, the storms could be only in a certain area, and the balloons could be working their way to this one area. At a certain time in the life of the balloons, they go to the lightning and explode. Their spores are blown back to the water, and in this way new balloons are started.

LORA FITZGEROLD

If this hemisphere toward Superjupiter is a desert, it must have sand; and if the weather is so violent, it must have great sandstorms. What if the balloons were caught in such a storm, could they be deflated? Could this be a form of death?

VINCENT G. WIBERG
Los Angeles, California

Concerning Mr. Disch's postulation of the philosophical natures of the balloons: What about the external sense organs of the balloons? The fuxes are shown with eyelike features in Freas's painting; do the balloons' sense organs function as eyes? And if so, will the eyes be on the groundward portion of the bodies—or toward the skies, gazing at the stars and auroral displays?

Maybe the fuxes would build a whole "religion" with creatures that don't even see them, except in the air!

DAVE MITCHELL
Los Angeles, California

As to balloons—Normal photosynthesis is using light to make sugars out of water and CO_2. Couldn't they use light to produce hydrogen both for lift and to store food? (This has just recently been done in the lab.) Water can be broken up, the oxygen being used for propulsion.

Intelligence—Important in the knowledge of wind currents at different altitudes to go where the balloons want—propulsion could only be fine control (low altitude goes to hot pole, high towards ocean).

First paragraph precludes necessity of free hydrogen in atmosphere.

RON WEISKOPF
c/o Chemistry Department
UCLA
Los Angeles, California

Religion of balloons: Possibly they worship lightning, or at least consider it as some small idol, if lightning functions in the manner postulated.

Could the use of hydrogen by the balloons for soaring be an excretory process? (Shit-flying?—as the usually postulated fire-breathing dragon excretes methane to use as a weapon.)

What about the life in the huge oceans on Medea? You didn't deal with it, except that the balloons may have been seaweed. Perhaps some process of life in the ocean created (eons ago) the spore-process of the balloons. Since neither balloons nor fuxes are of fish origin, but the balloons are plants—maybe originally sponges? That over millennia evolved to be air-borne?

DIANE SHERMAN
Santa Monica, California

Man's intervention causes the balloons and fuxes to compete for man's new physical form as a steppingstone for greater advancement. (Example: mental, religious, etc.)

LAWRENCE PEACY
Sherman Oaks, California

As a response to the relatively "violent" climate on Medea, the Fuxes and balloons compete with one another for food (the Fuxes use the balloons for food) and for airspace (they both float on the winds). Also, violence is indicated by the Fuxe protecting the egg. The Fuxes may kill balloons by piercing them with spears (shown in the picture)—If the Fuxes respond to the balloons as God-like figures, perhaps to kill one gives the hunter-fux high status in their colony (similar to the way Indians hunt eagles, bears, lions to gain wisdom, power, bravery, etc.).

I think the philosopher balloons use a pressure-gauge sphincter to control altitude—(the simpler the more feasible)—Tentacles could be used to adhere them to the hills for landings. Perhaps when the balloons fly to the cold hemisphere they compress and freeze—and enter a hibernation period—also allowing them to interact with organisms on the cold side—at least passively.

RANDALL K. HARWOOD
Culver City, California

Why hydrogen balloons at all? Why not hot air? A metabolic process, consciously controlled by the balloon, could vary the density of the enclosed air by production of heat.

If the fuxes regard the balloons as gods by virtue of their ability to fly, then the arriving humans (descending from the sky where Argo dwells) would seem doubly god-like.

Why not some three-way symbiosis among fuxes, balloons, and colonists? It could have properties as mundane as use of fuxes to guard fields against lower predators, or as subtle as some shared mystical experience based on flying. Good luck with the stories.

J. M. HALL
Downey, California

Why would two intelligent life forms which share the same environment (air) (since they are flying fuxes and balloons) be unable to communicate?

Lightning and tremendous storms are caused by the winds blowing towards the central mountain over the desert, rising over the central mountain slopes, generating intense corrective thunderstorms (the major source of lightning destroying the balloon life).

Balloons need fuxes to obtain hydrogen. Make fuxes like electric eels.

Balloons evolved from jelly-fish, developed ability to float through air to avoid predators in sea.

Humans who eat balloons achieve their wisdom—good idea.

ROBERT HELMBOLD
Northridge, California

I like your ideas about philosophical attitude of the ''balloons.'' I don't think there should be any ''real'' contact between the ''fuxes'' and the ''balloons''—why can't the ''balloons'' just be there—as philosophers that sit and contemplate and eventually go to their death—however—lightning or whatever. The ''fuxes'' could look at them as gods or just part of the world. The ''balloons'' as philosophers would be best at communicating by some kind of mind speech between each other. The arriving of the humans could aggravate the peaceful contemplation of the "balloons."

J.E. SELLECK
Tarzana, California

Plot variations, etc.:

Earth disease causes balloon's H_2 organ to stop functioning.

Balloon's H_2 organ produces a mercaptin or other smelly by-product that is distasteful to: (a) earth folk, (b) fuxes, (c) each other.

Give the balloons an insect enemy.

W. S. FINKELSTEIN
Glendale, California

Balloons need their gas volume for buoyancy, homeostasis, etc.—they only release it through a valve for altitude change. Therefore, they can't waste the gas "talking." Rather, they communicate (rarely) with each other by forming a complex array of patterns with their tentacles.

Among the gas bags, this communication must only be made for an important purpose. It is bad balloon etiquette to interrupt the serene contemplation for a trivial purpose.

Whether either humans or fuxes can decipher this complex language is optional—probably necessary.

JEFF GRIFFITH
Laguna Beach, California

Cognition requires energy consumption. Baby balloons start out as plants and then break free, after which they are unable to metabolize energy for themselves. The contribution of the fux in this symbiotic relationship is to release energy to the balloon when picked up and carried heavenward. This allows balloon to be almost pure mind.

JOHN BURGER
Simi Valley, California
(written for Mr. Burger, who
is blind, by L. VanDolsen)

With so much lightning and hydrogen around, I'd assume the human colony would try to alter the planet's weather around their settlement to make things safer for themselves—by putting up a giant lightning rod or something. This would create a "safe zone" for the balloons, and would introduce to them the idea that death can be avoided or controlled. Since the balloons' philosophical system is based on the idea that death is utterly random, this would result in an interesting philosophical conflict—one which would probably alter their culture to a great extent.

A not necessarily related suggestion—How about telling at least part of the story from one of the aliens' point of view?

JOHN RYAN
Santa Barbara, California

What if the small earth colony on Medea is established to exploit the natural intelligence of the balloons sort of raw intelligence sources which are kept alive after capture and used as sort of computer guidance systems. Being infinitely reprogrammable, and given that they possess an innate non-harmful demeanor (they're incapable of harming anything even to the point of defending themselves since it has not been a problem before), they'd add a safety factor to the ships.

As the earth colony begins to exploit them more, they turn to the fuxes for help—these carnivorous little devils can harm the earthies and will.

STEVE WAKEFIELD
Whittier, California

Not much attention has been paid to the religion, world-view, esthetics of the fuxes as they relate to their proposed life-cycle (female–male–post-sexual male). It would be nice to see a story or two which dealt with the interaction of the fux, balloonist, and human mythologies in a psycho-philosophic sense. P.S. You're playing havoc with Niven's Biology.

CHRIS VESTUTO
Pasadena, California

I have a theory about the interrelationship of the balloons and fuxes which was sparked by Mr. Sturgeon's mention of Lilly and the dolphins which I explained to Mr. Sturgeon in detail and is too lengthy to write. (Ask him.)

DANA BRADY
Los Angeles, California

The balloons and fuxes each have "classes" of existence. These social classes (for the balloons) come by a metamorphosis-like process by which they progress through colors (to match age) and therefore intelligence. For example, the lighter colors are the immature or newly developing specimens, darkening in shade and hue as they age and change to a higher class of existence. The fuxes have classes or families—that correlate by generations. Each family or generation of fux is "guided" by their specific "balloon" who in turn uses the fux as a slave-like creature to gather the source of the balloon's energy (or food source if you will). This slave principle could be elaborated on and extended. When the humans come, they disrupt the entire system. Who knows?

CHERYL GOULD
Woodland Hills, California

The balloons descend to pick up the fuxes to feed upon their blood or withdraw some substance from their bodies. The fuxes accept this because it allows them to spread their wings and glide down to their planet. (Perhaps a mating exercise.)

HARVEY GERSHENSON
Los Angeles, California

Do they have diseases on this planet and how are they treated?

Due to the "Buckminster Fuller Pear-shaped house effect," there would be a huge column of cold air shooting straight up. A balloon could conceivably lift a person up and deposit him on this column, holding him suspended there on thin air—crazy? Yes!

Perhaps the mountain could be a source of religious truth to the balloons. The balloons enter by way of a hole in the top of the mountain. They proceed to meet the fuxes in an underground cave, and there hold religious ceremonies. These ceremonies are responsible for the reproduction of both species.

MARK SAVAGE
Northridge, California

What about all the other creatures in the air? Surely some of them would find the balloons easy prey. How could the balloons develop philosophy in this case? What devices would the balloons develop to ward off the attackers?

RICHARD GAYLE
Houston, Texas

If the perturbations of the planet's atmosphere are so great, then the balloon creatures would be blown from one hemisphere to another. Would not death result from such an environmental conflict (the extreme cold)? Perhaps a peripheral culture or civilization would result due to the exposed side rim deaths of the balloons—which might be eaten by the fuxes. Such a culture would expand toward the holy pilgrimage center from its edges. Perhaps the arriving earth influence on Medea would attempt to stop this senseless migrating and death, thereby altering the culture. What about the dark backside?

MIKE FOX
Los Angeles, California

Upon lightning hitting the balloons, the explosion scatters spores or seeds which are perennially generated on the ends of tendrils on the body of the balloon. Upon stimulation by the explosion, the seeds pop loose coiled fluff (as in a dandelion seed) and float for some distance before landing. If they land on a river, ocean, or some body of water, they germinate and begin to grow. If they land on an unfavorable environment like land, they slowly degenerate. This keeps the reproduction rate low enough for a population equilibrium. If a fux finds one, he (she) considers it a great sign of religious significance and may take it as a sign to begin a pilgrimage to the hot pole holy mountain. Balloons do not have fur since in rain they would be water-logged, sink to the ground and fall prey to predators.

DAVID SPENCER
Los Angeles, California

The balloon people need not be individually long-lived if they derive their intelligence through ingestion. There can be many of them and they can die off at a terrible rate. Also, the relationship/worship between the balloons and the fuxes can be one of fuxes as bringers of food (bodyparts?) and water (for further electrolysis and greater expansion). The balloon responds by carrying the fux up to a level where mild hypoxia sets in, the fux lets go and takes off on a long religious glide.

S. McINTOSH
Long Beach, California

Hypothesis: The balloons have an internal muscle system that allows pressure control and hence allows them to change altitude. Let the mountain be the spawning ground of the balloons.

HARRISON ROSE
Los Angeles, California

If the fuxes consider the balloons as some sort of god, and also as a ''family head,'' then when the earthmen come, and the flames from their spaceships blow up the balloons, then the fuxes would consider the earth people their enemies.

However, since the balloons consider ''explosion'' ''sacred,'' they would like the earthmen. This would cause friction between the fuxes and the balloons, who had previously been friendly.

LIONEL WHITMAN
Encino, California

The reason there is advanced life on such a young world is because an interstellar vessel collided with Medea circa 0.25 billion years ago and created the large crater in the apex of Medea. The life from the interstellar ship then devolved into primitive sea forms and then evolved into the Gas Bag creatures. A religious pilgrimage, as part of their life cycle, causes them to migrate from ocean to crater. However, because of lightning and other hazards, few ever make it. Those that do take a high place in the religious hierarchy. As part of plot, the humans find the wreck of the ship and attempt to examine it in the comforts of their colony. This obviously has severe sociological repercussions to the Gas Bags. It is then that humans discover that the Gas Bags are sentient.

SHAWN HART
Los Angeles, California

Possibly the exceedingly precise color-differentiation ability of the fuxes would permit them to function as intermediaries between the colonists and the balloons. Also, with the evidently strong circular identification, would the fuxes have a thing for tits?

LINDA MILLER
Woodland Hills, California

One way of reconciling the different parts of "the elephant" to be revealed independently would be to narrate the landing of man on Medea and its consequences from the point of view of the balloons, then the fuxes, then man himself.

CANDY NORTON
Los Angeles, California

Let the tendrils on the balloons be hollow tubes. The balloon creatures could expel gas through these tubes (like a jet) so that they could guide themselves. This would also alleviate the problem of gas expansion, for as the balloons neared a heat source, they could release gas.

KEVAN GILMAN
Van Nuys, California

Picking up on Disch's "expanding gas" theory: As the balloons get older, they get larger through accumulated H_2. Larger size—greater intelligence—closer to achieving godhood through emulation of "Argos" —ultimately a balloon that survives the climate nasties travels to the theoretical "hot plateau", expands, and dies through explosion, becoming One With All by scattering its "intelligence." The physical bladder is then used by the fuxes to feed on.

Earthmen disrupt the system so that fewer balloons make it, and the exploded bladders lose nutritive potency for the fuxes by "dying young."

KURT BLACK
Seal Beach, California

The earth visitors begin to use the balloons as an energy source for the space ship and only later discover that the balloons are a source of knowledge of living and survival.

It is the "last chance" for the people of earth to learn how to live together. However, as the balloons give up this knowledge they are consumed. They begin to be drained of the "secret of life" at a faster rate than they can reproduce. The earthlings, in their overwhelming desire to get to the full "secret," cannot slow down this consumption of the balloons, and in the end earth's last chance dies with the draining of the last balloon, since the total balloon population at arrival time of man was only evolving itself, and the full story of the "secret of life" and "the reason for being" was not yet developed.

HOWARD AND TRUDY COOPERMAN
Beverly Hills, California

One group could be there for recreation. With such a heavy atmosphere, one could really hang-glide. How would the balloons react to these people?

RICHARD GAYLE
Houston, Texas

What about: Story viewpoint from four protagonists—maybe one is a balloon, one a fux, two humans—each writes his/her own story, ending in getting eaten (for various reasons) by the next narrator, and each incorporates parts of the preceding personalities. Four stories—one by each author, maybe. Maybe melded into one united novel. Example: balloon tells story, gets eaten by human for food, who tells next story, surprised at sudden new personality manifestations. Then Fux wants to learn about humans, eats the one who ate the balloon, and the fux eventually volunteers to be eaten by one human, who then has an overall viewpoint of the planet. (This assumes learning and intelligence is transferred by oral ingestion.)

CYNTHIA L. MOORE
Long Beach, California

I don't think a mutually beneficial behavioral relationship between the balloons and the fuxes is very probable. In the experience of this planet, with all the flying or gliding animals, I can't think of a single such example. Any contact is predatory. It would be possible for the fuxes to have a religious or moral structure centering around the balloons and could include consummation of the debris of lightning destruction, or even actual hunting of the balloons.

Further, in terms of story plot, it might be more apropos if human intrusion sets off a chain of consequences in the ecosystems that result in a *Götterdämmerung*-type conclusion—without any active cooperation between balloons and fuxes. I picture that although the balloons may be the more intelligent of the two native species, it would be the fuxes who would be the active agents in response to human intrusion.

NEAL SHEADE
Santa Monica, California

There was a mention of shadows on Medea and a creature that burrows within the desert sand. I feel that the creatures beneath the sand can have a creator role on the surface and air species, and man. When shadows undergo a peculiar condition (maybe caused by Argo and one of its satellites interacting with each other), the creatures can try to contain themselves within these shadows and then reach out for anything that resembles food.

MICHAEL C. PICKERING
North Hollywood, California

The motivation for man's intrusion is the eternal search for immortality.

The balloons, regardless of the atmospheric condition, *are* immortal.

Therefore they are indestructible, and their passive and/or aggressive relationships with the "fuxes" are determined by their own needs for thought/philosophical or mental activation.

The "holy mountain" mentioned is worshipped by the fuxes, and it is man's hope, and folly, to try and emulate the balloons' means of eternal survival through first following the balloons and encountering destruction.

Then emulating the fuxes' means of worship to reach the balloons and eventually man's destruction again.

JOHN GRAUMAN
Beverly Hills, California

The fuxes worship the balloons as gods; and when a fux is near its death, it climbs to the central mountain, where a balloon descends and gathers all the intelligence and memory of the fux. Thus performing a coup de grâce. The balloons live immortal lives without reproduction. (The balloons have long since evolved past reproduction, which explains their existence as a population in that they once had reproductive capacity, but now live as immortals.) The balloons form a collective mind, and each time a fux dies its experience and knowledge are absorbed into the mind. Thus, this communal brain grows in intelligence and memories to contemplate. Perhaps the fuxes are an artificially intelligent race endowed by the balloons with intelligence so the balloons' mind may continue and grow. Perhaps the balloons control reproduction in fuxes as well.

PETER SCHNEIDER
Santa Monica, California

BEFORE SENTIENCE: Balloons move from sea to Hot Mountain. Lightning form of death. Balloons "descend" as they near mountain to get as close as possible as land comes up to meet them. Fuxes consider balloons as god manifestations. As balloons near ground level close to the Holy Mountain, Fuxes catch and eat them. Food of the Gods. Balloons consider fuxes as unnatural deaths, catch fuxes to stop them from bringing balloons to an unholy death. Balloons take fuxes upward and drop them in anger. Fuxes and balloons both migrate to the Mountain for holy experiences.

AFTER SENTIENCE: Balloons come to consider two forms of acceptable death: (a) lightning (natural selection) and (b) suicide at base of mountain by descending to fuxes. Death means eventually returning to the Sea of Birth. Rebirth.

Humans considered by balloons contiguous to lightning death as balloons are zapped by humans' hot-air devices.

DICK GLASS
Santa Monica, California

Based on the supposition that the tidal pull of Luna affects human psychology (dependent upon the phase of the moon), I would suggest that the greater but less often occurring pull of the superjovian creates periodic instabilities in the fux with psycho-sociological ramifications. This would be even more important in human colonists.

MICHAEL FRUMKIN
Studio City, California

The balloons use the breeding of the fuxes as a hobby, much as people who breed and show dogs or pigeons. The balloons carry up a fux (which is the product of a planned breeding program) and demonstrate the animal's soaring power. (''My fux can soar from 14,000 feet.'' ''Oh, yeah? See mine drop from 16,000!'') They hold their fux bloodlines by restricting their breeding strength of wings, streamlined bodies, perhaps color. The balloons refuse to acknowledge (or do not know of) the fux's high intelligence. The balloons exchange fux stud service for balloonish favors, or sell promising young soaring fuxes to one another. The fuxes eventually revolt.

SANDY TETZLOFF
Stanton, California

Whereas: The balloonists would have to have been hereditarily accustomed to a totally solitary existence (from each other, at least) because if they congregated in groups (two or more) or even arbitrarily or accidentally made contact with each other in the ever-present danger of lightning immolation, there would be the distinct possibility of suffering the death of their neighbor.

Therefore: Unless they were inherently suicidal (which hardly seems likely, for all their religious ardor, as death is still an ending of their purpose, and to deliberately aim for one's own obsolescence is not only self-defeating, but patently insane), they would never have any physical contact with those of their own kind. Whereupon: They would be lonely. It is probable that the fuxes and the balloonists would form a relationship, not only of religious experience, but of actual emotional interplay. It is also probable that some of these possible one-to-one relationships would develop into non-comprehending friendship. The beings would not have to communicate to feel ties to each other. Presuming then that the Terran colonists, whether advertently or not, destroyed, deflated, or immolated some balloonists, or a lot of balloonists, we would have some rather irate fuxes on our hands.

Result? Carnage, plot, development, whatever. Even stranger if we have only one angry fux. Also, what if there developed a suicidal-homicidal balloonist? One who does his bally level best to go to glory and take as many fellows with him as he can manage?

JANE E. McGUIRE
Santa Monica, California

If we assume that the apogee of Medea to Argo is at the same time as the apogee of Argo to the suns, then there are going to be enormous cross currents. This also causes extreme hot spells on hot side and cool spells on cool side.

Say the fuxes worship the balloons and follow them wherever they go. Fux feces, when deposited on plants or spores by the sea's edge produce organic chemicals that the balloons consume. When the sea's temperature is too hot or cold, the organic chemicals are not produced. Hence, from season to season the balloons use cross-winds and fuxes move from hot side to cool. The earthmen come and upset age-old system. Fuxes want to colonize and stay in one place, inadvertently causing balloons problems—conflict.

TODD ALBERSTONE
Beverly Hills, California

One possible way of controlling the movement of the balloons during high winds is by the herding by groups or individuals of the flying fuxes. The balloons could be brought to sheltered areas (possibly prepared by the non-flying fuxes). This would allow a continuous relationship with individual balloons.

Also, it would seem the 3rd stage (male) of the fuxes would be the glider, not the first stage (female). The males would be much lighter, and their weight would facilitate flying. Also, flying would make it easier for them to find females to mate with.

SCOTT HANNA
Santa Monica, California

With the fux-balloon symbiosis you could have total rapport between the individuals of the two species that join together (perhaps through mutual lunching on each other; you can eat bits of someone without killing him). But when the humans land, this creates a difficulty in communication since for the first time on Medea, there exists a sentient creature that might be unwilling or unable to mentally join symbiotically with the balloons or fuxes.

Re: Sturgeon's idea about human maverick joining the balloons. One human misanthrope could become, or attempt to become, a disciple of a balloon. He would build himself a balloon and float the skies learning the language of light and death from the balloons.

The ingestion of balloons (perhaps only method of communication): Humans could have a 50-50 chance of dying or gaining the eons-old wisdom of the balloons. Could be seasonal time when balloons could lose hydrogen, come to ground, and fuxes could board them to form symbiosis.

MARC ZICREE
Los Angeles, California

The balloonists are telepathic creatures that use the fuxes to protect themselves against other predators. (Balloonists are delicate and could not survive in such a hostile environment otherwise.) They can use the fuxes to protect themselves against the humans, if necessary.

When a balloon bursts it releases spores, which the winds carry to the sea where new balloons grow to maturity, then metamorphose to the atmosphere.

DAVID L. KREBS
Los Angeles, California

Communication: What if "Balloons" relied solely on aura-color or sibilants as age-old method of communication with lower inhabitants until—humans (a human?) with receptive minds arrive on the planet and find they can successfully communicate with these creatures by and through mind only. Might pave way for the showing of some previously unrecognized truth and thereby change the life of a particular man (the poet of your expedition?). After all—the balloons are philosophic by nature . . . and haven't anything *better* to do than float around discovering great truths—do they? Maybe make a close relationship between boy-poet-man and one balloon—when balloon is stuck. Maybe a spark to the man's thought processes start or end of his revelation.

CRIS WHITLOW
Hollywood, California

The balloons have a geography within the air. The Terrans don't recognize this at first, so they tread on sacred ground/air. The balloons (and fuxes?) try to retaliate, but their efforts are interpreted as friendly gestures—childlike signs that the Terrans misinterpret as signs of low intelligence. If the chemical reaction within the balloons would give off heat, would the balloons be used for heating (like the garens)? Perhaps a balloon saves a human who is in danger of freezing to death. At first attack is suspected, then benevolence is realized. He would recognize the balloon's intelligence. He would have the tough job of persuading the other humans of the natives' intelligence.

The reason for landing on Medea has nothing to do with Medea but rather with something like studying Argo or something else. In the end, Medea is the important reason for being there.

Could picking up the fuxes by balloons stimulate (if only by stretching the tendrils) some sexual/reproductive response?

GEOFF BERKIN
Los Angeles, California

The "balloons" control the fuxes by telepathy and this is how they communicate, but the fuxes cannot really communicate back to them. The balloons are very controlled in their telepathic messages to the fuxes. When humans come here they accidentally introduce the fuxes to the way to communicate back . . . this causes problems for all involved.

CHERYL GOULD
Woodland Hills, California

The balloonists are treated with awe by the fuxes and finally the men because they produce a chemical by their own biochemistry at will that can cause a mystical experience in the fuxes and humans they come in contact with. They can control the effect that it has on the organisms they contact. They become important for the information they can communicate and for the experience that they can give.

C. SCOTT ELOFSON
Norwalk, California

Write the book on three levels: (a) three writers on viewpoint from three different fuxes—each on different social level; (b) three human viewpoints; (c) three balloon viewpoints. (Nine different writers.)

DRAKE LETCHER
El Segundo, California

Persecuted groups often migrate to a new place. Scientists, persecuted and reviled for depleting the earth (justified or not), make a last escape in a ship they have as their last resource and flee to Medea (after a search for a world). They find there an answer to aid a dying earth through a technological and/or mystical breakthrough learned from this race. Back on earth this information is rejected through superstitious fear of technology and they stay, learning more until their counterpart scientists left on earth begin to create a slow revolution with this new technology/mysticism, which may save earth if they are not all destroyed first. If they fail, those on Medea bring them there and leave earth for good. Male and female scientists please—maybe bisexual.

CAROLINE MOLITCH
Fullerton, California

Humans could be on Medea in order to learn about how peaceful co-existence *can* develop. Plants or amoebas or some magnetic force of gravity on earth have been discovered to be highly sentient by the humans, and mankind is faced with problems of recognizing and learning to accept a second form of intelligent life. Animals (such as dolphins and dogs) have evolved and can communicate with humans—this was problematic and has led to a form of slavery. Plants on earth, however, are fundamentally far more advanced than animals and even have religion and technology and culture beyond what we can now imagine.

Only a few scientists on earth *really* know about "the secret life of plants". They have formed the space colony on Medea to learn the secret of co-existence. Only this colony, now on Medea, knows of the plant life on earth. Problems arise as humans disturb the ecology of the Medean social system. Certain types of ignorance *were* bliss before the arrival of man. Maybe man becomes an interface and in trying to understand such species on Medea tries to explain each to the other. This leads to misunderstandings and reaction by each species to "protect" itself or to attain "equity."

Conclusion could be that co-existence was disrupted irreparably by the earthmen and they realize that they must remain on Medea or commit suicide and *not* let knowledge about plant intelligence (or whatever the other form is) get out. Thus, they save earth for a few centuries from disturbing its fragile intellectual ecology. (Co-existence is only possible through ignorance of one another—unaware that each has motives.)

JIM CARLISLE, PH.D.
Information Sciences Institute USC
Marina del Rey, California

On intelligence: The balloon creatures may have developed as bladder-like creatures in the ocean, having the original ability to raise themselves a foot or two above the surface of the ocean escaping the ferocious jaws of predators, developing intelligence by being clever enough to do this and survive. Perhaps the balloons just like to pick up fuxes and drop them for fun, a mild amusement to pass away the idle hours.

Have a balloon go on a pilgrimage from the ocean to the hot desert mountain—perhaps taking a fux with it—trying to give it religious experience.

If the females eat the males at every copulation, the females will produce two offspring at the expense of the lives of two males. So you have an incredibly stable population. How did it ever reach such heights to begin with? The population must be shrinking. Polygamy might be the answer, several females to one male at each copulation (meal). That way, six or seven females can produce six or seven children at the expense of only one male fux.

TOM STEGELMANN
Northridge, California

I envision a much closer relationship between the balloons and the fuxes, i.e. the balloons are actually the adult form of the fuxes. The fuxes are cannibalistic only for natural weeding of the weak. They eat each other's eggs and of course those too weak from guarding their eggs without food or water. This is *Nature's* way with most creatures and I would imagine is somewhat of a universal law so that only the strongest survive.

Also, the balloons being the higher intellect, evolved, can mobilize themselves with telekinetics.

SJON CARROLL
Sherman Oaks, California

The Terrans arrive; they disseminate their culture, then they abandon the world, moving on to their own fate. But the effect on the Medeans is the resolution of the work.

Several stories are told in chronological order, from the viewpoints of various compelling humans. Yet always in the background hangs the collective memory of the Medeans, constantly growing and changing, but incomprehensible until the final moments of the book.

ROBERT BENSON
Santa Monica, California

There hasn't been anything said about the other side of Medea. What if the life forms on the other side tied in with the spiritual life cycle of the balloons?

TAB HORAI
Monterey Park, California

It would be interesting to tell the story of what is going on from the viewpoints of the different inhabitants of Medea and the earthmen in separate short stories (i.e., how it seems to a fux, a balloon, etc.).

SANDRA HARRIS
Gardena, California

Why not publish the four stories as they are being evolved without joining them under any specific plot structure? Instead, have them follow (a) the specs as offered to them and us; (b) an edited transcript of the session tonight, i.e., more loosely organized—*Five Fates*.

PENNY WALKER
Glendale, California

Suggesting colonization by Earthling from necessity. Earth is shot (old idea, but becoming a reality).

Also—it is a permanent place to live—not there for economic reasons. Suggest inbreeding between earthmen and planet inhabitants—starting with fuxes, the sexy little devils, and eventually with balloons (though in a different way). Long drawn out tale—several generations of half-breeds.

TEDD HANIS
Gardena, California

Forget about the humans; the importance is the relationship between the fuxes and the balloons. Have three narrations intertwined relating the same events. One fux, one human, and one balloon. Each sees different reasons and cannot really enter each other's world. At first the humans interact with the fuxes because of their similarities; but in the long run, because of the humans' acting as a catalyst in this world, a new relationship develops between the fuxes and the balloons, and the humans are cast out (possibly destroyed), sent away, eaten, etc. Maybe the new relationship is religious, evolutionary, philosophical, who knows.

Maybe you could develop a fourth viewpoint, decide on certain events, happenings, then each of you write one of the viewpoints.

LINNEA NEELY
Santa Monica, California

One story from the point of view of the balloon as the protagonist, then the fuxes, then the human. Perhaps even the planet itself could be the protagonist.

The human could come in search of energy, or in search of knowledge with good intentions he may try to act as mediator between the fuxes and balloonists but would disturb the sociological/psychological balance, causing chaos and ultimate disaster.

The balloonists encompass intellectual creative energy as opposed to the physical/sexual energy of the fuxes—symbolizing ultimately Jung's concept of the shadow (fuxes) and persona (balloonists). Three major climate areas creating psychological effects on segments of both populations: (a) area towards Argo—hot; (b) marginal areas—temperate; (c) side farthest from Argo—cold; (d) strong contrast of climate between them creating pockets of horror.

WENDY LANG
Los Angeles, California

If the fuxes keep dropping appendages and move to a neutered stage, might they not *be* balloon creatures? Remember that the balloon creatures have been repeatedly attributed a contemplative nature. Much easier to be such if you've already been through all the noise in your earlier stages—first as female and then as male.

DAVE CROCKER
Los Angeles, California

Working with Disch's idea of a one-to-one relationship between a fux and a balloon—How about a triangle between a fux, a balloon and a human child? The fux is jealous, at first. It must grow to accept the newcomer. The balloon is intrigued by the new life form. The human is in it only for the sheer beauty of flying with the balloon herd as they sing to each other. The human must be a child to be light enough to be lifted; thus, with age, the whole thing must end.

JAMES R. PRESTON
Huntington Beach, California

I propose that the protagonist of the story be the delicate socio-cultural balance of the balloons and the fuxes. The balloons exist as 'gods' for the fuxes (à la 'guardian angels' as proposed), a relationship that has been deliberately cultivated by the balloon creatures. As already discussed this evening, the balloons are the heavyweights intelligence-wise, and, to avoid becoming simply prey to the fuxes, have been forced to create the god-subject relationship with the fuxes. Thus we have the religious events of the occasional accidental lightning death of a balloon and the subsequent eating of it, which enables the lucky fux to ingest the wisdom of the balloon and become a demi-god in his culture.

Then: The earthmen come in to the story and completely wreak havoc in the Medean culture by having a severe lack of understanding of just who is sentient. The earthmen enter simply as explorers. They gather up the balloons to use as a source of fuel, etc. They eat the fuxes, etc. In order to survive, the balloons are forced to abandon their god-head, and team together with the fuxes to drive away the earthmen. The particulars of how this is accomplished is your problem! But my point is that the delicate balance between the fuxes and balloons is irrevocably changed by the interjection of the earthmen. Will they drift into self destruction because of this, or will they eventually benefit from it?

The point of view is entirely that of the Medeans.

The balloons are pretty heavy philosophers because a philosophy based on random accidental death by lightning would be much harder to deal with than one based on the inevitability of death such as we have.

JENNIFER BALAY
Los Angeles, California

What if humans were say 20% larger than the fuxes and were seen as super-males? Fux population drops terribly in the course of the terran colony's existence. The symbiotic relationship with the balloons is hurt indirectly only.

KAREN SPARR
Sherman Oaks, California

What would happen if (1) Earth biologists exported fuxes to Earth for zoos; (2) established vivisection laboratories for ''research'' purposes? Possible effect of Earth pathogens on fuxes and/or balloons? (Old idea, I realize.) Effects of drug therapy when standard Earth antibiotics used to treat said diseases—mutations in either, or both, species?

Could Earth researchers duplicate the fuxes' biochemical pathways, adapted for human metabolism, to the extent that genetic memory becomes available (via RNA/DNA transfer) to humans?

Developing off the ''fox furs'' concept: ''balloon skins'' as new luxury fabric? Has anybody really determined what their composition is, anyway?

TATIANA ROSE
Los Angeles, California

Possible mobility of the balloons could be from telekinetics. This would explain the necessity of intelligence.

HARRISON ROSE
Los Angeles, California

Sperm and egg meet in air and egg is fertilized then floats to ocean or ground. Sperm and egg on ground is devoured while sperm and egg in water develops.

Fertilized egg in water sinks and anchors itself to reef or rock to develop. As it develops it sucks hydrogen in slowly through a one-way membrane and swells until it detaches itself from the rock, leaving the anchoring fixture still attached, and floats to the surface where it will be washed ashore with others to absorb hydrogen and sunlight and swell. While waiting to absorb ''H'' on the shore they are open prey to any larger animal or being. The only defense being a sonic expulsion of gas which also leaves them on the ground a longer time. This increases the possibility of their being someone's dinner. When they have filled they float up to meet other larger groups of balloons.

Since the large red sphere is the central point in the sky and since it is revered as godlike, shouldn't there be a pilgrimage to the planet?

The reason balloons pick up fuxes is because fuxes feed on the young when on the shore waiting to swell and rise. However, balloons do not drop fuxes because that would lower them to the position of the fuxes. They just latch on, rise and scare the hell out of them which in turn provokes the fuxes to prey on the balloons—full circle.

Could a fux (female) befriend a human (male) simply because of the chemical attraction?

RICHARD WEAVER
Long Beach, California

Assuming that the balloons are objects of worship to the fuxes, embodying the supremely good or admirable quality of roundness, it would seem that the fux religion doesn't include any element of conflict (as in God vs. Satan). These God-figures, the balloons, have resigned themselves to the fact of their personal deaths—indeed, a great deal of their philosophy centers on this idea because of the traumatic and ever-present danger of lightning. Humans arrive, providing the fuxes with an element of conflict—''devil'' figures. People are more forceful, more disturbing than the balloons, and are considerably less resigned to the idea of their own deaths—not being as terribly conscious of impending or overshadowing danger as the rather 'passive,' 'placid' balloons. Net result to the fuxes: 'good' is resigned to, accepting of its own destruction, and 'evil' is not. A religious outlook might result similar to the old Norse idea of Odin and his enemies. Odin is good (or at least admirable), whereas his enemies are not only trying to defeat him, but are destined to succeed.

The fuxes are led, through interaction with balloons and humans, to see the futility or ineffectualness of the balloons (as contrasted to humans) and perhaps become disillusioned with the balloons, or at the very least change their conception of them and their relation to them. Probably told best from a fux's point of view.

RON WILBURN
CATHY KIRKLAND
Los Angeles, California

The balloons pick up the fuxes because they are able to tap fux brains via their tentacles. They perform this activity to enhance their awareness—which is done by ingesting the genetic and proteinaceous material (memory) of the fuxes and thus absorbing their (the fuxes) perception of the world. In addition, a balloon that ingests a fux may also ingest the substance of a balloon that the fux has eaten, and thus will be able to re-experience the personality of that dead balloon. Balloons keep their population down by balloons knowingly entering the lightning area to be struck, knowing that the fuxes will eat the dead ones and thus storing the genetic material in the fuxes as a reservoir of balloon history and experience.

JOSEPH LA VERYATA
E. STEINBERG AND K. STEINBERG
Los Angeles, California

What if, later in Medea's history, one of the reasons humans came was for sport/art, the intense beauty of flying with the balloons, becoming a part of the chirping multi-colored swarm. It would, when contrasted with the harshness of the planet, make a unique esthetic experience.

JAMES R. PRESTON
Huntington Beach, California

I would think that the fuxes would be strongly territorial, and the balloons just the opposite. This would make personal relationships between individuals unusual and tend to make the two species more remote from each other. I would not think communication possible between them.

Technical note: balloon needed to lift a fux (150 lbs.) would need to be about 15 feet in diameter.

Since the primary domain of the balloons is the air, contact with fuxes under normal circumstances would be minimal.

I like the concept of ''immortal'' balloons, killed by accident only. When lightning disrupts a balloon, the necessary spores (or whatever) are released to create more balloons (keeping population stable).

Technical note #2: The tidal bulge of the planet would not be apparent from the surface, because at every point the force of gravity would still be perpendicular to the surface. It would not appear as a ''mountain.''

RUSSELL HOWARD
Caltech
Pasadena, California

If the winds that blow around the place are not too strong in places, or have calm spells of several hours, might the scientists there use hang-gliders to go up and study the fuxes and the balloons close up, in flight? They could be made of non-conductive materials to avoid attracting stray lightning bolts, and recorders could be attached to the people who go up in order to record their observations. The fuxes and balloons might act hostile or frightened at first, whenever a glider comes near, or they might be fascinated by them. It might be a small detail for the story, but if the winds allow it to be feasible, I think it's very promising.

The gliders would be used for conservation of energy. And the place to launch them would be from the top of that tall city on the cover there.

MICHAEL BOND
San Pedro, California

The earthmen are faced with the problem of whether to cut off the broadcast power and allow the return to periodic slaughter of the balloons. They like the balloons but dislike the fuxes. However, continued broadcast power generation will lead to extinction of the fuxes and damage to the planet's ecology.

STEPHEN BAYLISS
Los Angeles, California

Balloons might eat (aside from the rarity of other aerial species) the newly-dropped hindquarter sections of the fuxes—this also helps keep the fux population down (otherwise it would be very large with such a short reproductive rate).

Balloons do this nasty thing because they don't know that the fuxes are intelligent (in any way they understand).

Humans arrive and eventually learn of the situation. What do they do? Interrupt balanced ecology to "save" fux young ones? Do they (can they) communicate to the balloons what they are doing?

A large problem to the humans will be basic understanding of the natal processes of the balloons. It's not just a matter of translating languages, but the basic differences between two races who exist in such different realities. So, the humans may ask, do the fuxes understand the balloons? (Presumably the fuxes would be a bit more understandable to humans—than the balloons.) And if so, can the humans learn about the balloons through the fuxes?

MARK R. KELLY
Sepulveda, California

The balloons are plant life. Three-stage life cycle—(1) adults (reproductive), (2) spore-like reproductive bodies and (3) seaweed-like plants to which the adults are attached until released as adults. The reproduction takes place in the cold outer seas. The balloons have established a symbiotic relationship with the fuxes. They are using them for their periodic migration against the prevailing winds to the ancestral spawning grounds—the near frozen areas of the cold outer seas.

The fuxes, unable to rise independently from the surface, are assisted by the balloons and are then able to maneuver. The fuxes' reasons for the seasonal migration is food. The change of season, however slight, is enough to thaw areas where a particular desirable food supply flourishes.

M. F. BOB FRIEND
Northridge, California

The balloons possess a transcendental property that is desired by the Terrans. A small group of Terran opportunists seek to manipulate the symbiotic relationship between the fuxes and the balloons by getting to the balloons through their dependence? contact? with the fuxes. In other words—Terrans using the fuxes as an unwilling? unknowing? middle man to achieve their own ends. Or perhaps, the Terrans are motivated not only by selfish desires but also a wish to help the Medeans.

TOM CUTTS
Pasadena, California

Possible sub-plot: Environment: Accepts symbiotic religious interaction between fuxes and balloonists. The more developed avian race utilizes fuxes as ballast, latching onto them with their tendrils, while the fuxes accept this attention as a "gift" from "god."

Specific geography: Mr. Sturgeon suggested a central plateau at Medea's center (Nearside). Make this in fact a crater, very deep and safe from the raging winds rushing to this the planet's hottest point, from all directions.

Specific culture: Balloonists, floating freely, consider these centralizing winds an Ur-Force, which only the most highly developed among them may navigate. The crater becomes in their eyes a kind of Valhalla where the best of them reside.

Plot-line: One balloonist, particularly important to some unspecified Terran scheme, forms an emotional and intellectual bond with some pivotal fux, and with his aid, contracts to journey to this climactic locale in either a brotherhood or hopeless love bond . . . Damon and Pythias/Romeo and Juliet, if you will.

JEFF WATKINS
Hollywood, California

If one postulates vastly different lifespans for balloons and fuxes, it is difficult to imagine communication via a common consciousness. After all, the life of a fux might be a mere coffee-break for a balloon. A butterfly does not share the worldview of a Galapagos tortoise. Ecological interaction is, of course, possible/necessary.

Enter humans, oblivious of the ecological interrelationships.

Their intrusion leads to disaster, possibly by altering a tiny corner of the eco-system (killing shrews?), leading to an ever-expanding chain reaction.

Along this line, balloons and fuxes need not be sentient (it's a young planet).

If this satellite contains *levo-carbohydrates* and *dextro-amino acids*, humans would be in grave nutritional trouble. Perhaps the addition of 1*amino acids and D-carbohydrates brought as food by earthlings would neutralize (matter-antimatter) essential compounds necessary for life on Medea.

Therefore humans are unconsciously a force of evil due to their inflated ideas of self-importance. (Has this theme been done to death??)

PHILIP HERZOG, M.D.
Santa Monica, California

The psychological (and theological) compositions of the fuxes and balloons seem to be developed enough to allow the authors to disregard the purely human point of view. At least several of the stories can be told from the point of view of either a fux or a balloon, most likely a fux. Humans would probably be viewed in about the same way as an invading alien on Terra (which is essentially what we would be). It seems that the fuxes are more likely than the balloons to establish contact with the colonists.

LINDA MILLER
Woodland Hills, California

The fuxes don't consider the balloons gods, nor do the balloons consider the fuxes as gods. Instead, they consider themselves the product of "God," in his image, and the other race is punishment God has placed upon the world for early evil.

The earthmen arrive and the balloons think "Yes, they fly like us, but they walk on the ground like *them*. They must be evil." The fuxes think, "Yes, they walk like us, but they fly like *them*, they must be evil."

The balloons appear to have a large amount of cilia-like and flagella-like appendages. These might beat extremely rapidly and be used for direction. Especially if the balloons expel gas through a mouth central to the flagella.

CRAIG MILLER
Los Angeles, California

First men on Medea communicate with Earth about some great resource, possibly tied to one of the life forms, and encourage them to colonize "en masse." While they wait they become acquainted with and study the inhabitants and go through some sort of great enlightenment because of the contact in terms of philosophy, etc. Men realize that if colonists arrive consequences would be disastrous. Problem then becomes one of how to non-violently and working together—stop the wave of colonists to come.

KAREN MILLER
Claremont, California

Use the specs as basis for the world, i.e. intro to book, modified by tape transcription. From there move into four sections—Earth: Silverberg's geographical venture. (Wind) Air: ?. Water: Sturgeon's fluid "window" concept. Fire: Disch's Phaëton. Four motifs explored in the interaction between two worlds.

L. STEELE
Long Beach, California

Inter-relationship—fuxes and balloons:
(1) Symbiotic.
  (a) Fuxes provide H_2
    (1) Multi-appendages = usable to produce.
    (2) Form H_2 producing plants?
  (b) Balloons provide a world-wide weather forecasting system.
    (1) Hindquarter eggs are atmospherically exposed therefore wind/sand storms and tornados, etc.; Balloons give the go-ahead for reproduction.
    (2) This gives balloons a father-figure attitude in themselves and the fuxes.
  (c) Plot offshoot—Terrans also predict weather accurately.
    (1) Shift of loyalties
    (2) Trade labor for data, this explains "walkie-talkie" in picture, fuxes have employable uses (think of an assembly line of 6–8 workers!)

(3) Jealous responses of balloons to stolen loyalty

(4) If Terrans *can't* predict weather, they can provide shelters (geodesic huts, etc.)

Also: (1) Long-lived balloons make good interplanetary pilots for "sleeping" men. This shifts the exploited role to balloons and the fuxes get the hero role.

(2) Tentacles are wind "anchors" for balloons

(3) Flying of fuxes is glider on thermals and currents, effective range approx. 1 km per 100 m height (10–1 glide ratio).

(4) History of balloons—Jovian lifeform migrated at near collision à la Anne MacCaffrey's Dragons and "threads."

In order to preserve the uniqueness and alienness of this interplay of two sentients—stories should be from Terran Point of View, the overview prearrival should be as from a history book, Terran oriented, but neutral.

DAVE LUSTIG
Woodland Hills, California

Similar to the African lions and antelopes which visit the same waterholes with no violence and/or fear after the lion has just eaten his fill, the intelligent balloons could realize when the fuxes posed no threat to them and could therefore approach the "waterhole" with the cannibalistic fuxes; reason could be the seeking of some vital life force, or desired knowledge, perhaps, or simply the inexplicable thrill of communing unharmed with a potentially dangerous enemy—whatever the reason, at this time the balloons lift the fuxes.

GARY BALLARD
Los Angeles, California

(A) Forms of communication between fuxes and balloons.

(1) Possibly a strong form of telepathy for balloons and a weaker form for the fuxes. The fuxes would need something when there is a season of storms. The high winds would virtually drown out all sound.

(2) If the balloons communicate by color (*VOR*) then the fuxes would still need a form of telepathy to make a two-way conversation. Presumably, telepathy and the other parapsychological talents would still be pretty undeveloped in humans so they would not be able to understand fuxes and balloons.

(B) Postulating a fifteen-year life span, the incubation of the eggs would have to be less than two months. Also, the young might have to come out fully developed, like an insect.

(C) Possibly the balloons are a remnant of a former civilization or a past colony from another star. This would be borne out by the fact that they are vulnerable to U.V. Any creature usually develops an immunity or a tolerance or a protection against their environment with evolution to intelligence. Balloons are therefore not native to this planet. The crater that might be in the bulge toward ARGO could be the result of a war in the past or a collision which would drastically change the climate, weather, etc.

(D) The balloons ingest whatever they eat and form small hardshell objects for excrement or maybe form them to coat irritants, like oysters. The fuxes assign these religious value, but grow less superstitious over the years and start to barter these to humans who find them valuable in some way. The fuxes want to get human technology and the balloons resent the humans upsetting their god status.

THOMAS BLACK
Los Angeles, California

Balloons pick up fuxes because they can then tap fux emotion.

Balloons are artists as well as philosophers and require fux emotional memories as the raw material for their artistic compositions. Alien intellectual/emotional ''flavor'' of the human visitors ''tapped'' by the balloons causes balloons to attempt to enhance the depth of their compositions by establishing a balloon-human relationship similar to the established balloon-fux relationship.

STEINBERG
Los Angeles, California

Sturgeon suggests a Portal in the evolution of human species on earth. The revolutionary concept that enters the human consciousness from Medea is that of the ultimate unity of both sexes—both poles—sans chauvinism, sans sexism.

JOHN J. LA CORTE, PH.D.
Department of Philosophy
Cal State College
Dominguez Hills, California

(1) Why couldn't the balloons manipulate, hypnotically or otherwise, the fuxes, and thereby create and control a technology. This would provide a strong means for a bond.

(2) As a means of propulsion for the balloons, couldn't there be some process where the Hydrogen is produced as a metabolite and the balloons would then have a source of gas. This would give them greater leeway in expelling gas to propel.

(3) Or (1B) The tendrils on the balloons could be sufficiently motile for them to manipulate instruments.

(4) Food for the balloons: ''planktonites'' in the air. In areas there would

be a good deal of O_2 and moisture about, and the tendrils could serve (partially) as gathering organs. Or for that matter the surface could be the gathering organ.

NELSON HINMAN
Santa Monica, California
& JANIS POMERANTZ
Los Angeles, California

(1) The information which might change/benefit earth
  (A) Gained from Balloons—philosophical creatures
    (1) Possibly anti-gravity technology
      (a) Explains balloons being in air
      (b) Explains evolutionary development of intelligence
      (c) Culturally divides balloons and fuxes
    (2) Cultural influence on humans
      (a) learn must respect intelligent/all life forms
      (b) instead of humans being "seed" to them, have their culture be "seed" for our culture
  (B) Balloons must remove Hydrogen from atmosphere
    (1) lightning will destroy whole "school" of balloons

I think you should each write separate stories. I don't think you will ever agree on one story without compromising all or most exciting and interesting ideas.

RICHARD MOTLEY
Ridgecrest, California

How about the possibility of the fuxes preparing for a holy war against humans for altering their relationship with the balloons? The balloons would know about the upcoming tragedy but, for philosophical reasons, would not help the human who finds out and must prove it to the rest of the colony.

JAMES R. PRESTON
Huntington Beach, California

Have some of the balloon plants evolve or remain under water. Have the underwater plants know about the fuxes and air balloon plants, but don't have the fuxes and air plants know about the underwater plants. Have the underwater plants tell the story of the planet at the same time that the humans who land and later colonize tell the story of the planet.

New idea: Have a by-product of the air balloon plants' hydrogen synthesis process cause some of the male fuxes to become sterile. (It has taken years for enough of this by-product to collect in the atmosphere.) Have the fuxes realize this. Have them hate the balloon plants. Have humans come to Medea and accidentally destroy a lot of the balloon plants. The fuxes communicate their problem to the humans because the humans have destroyed their enemy. The humans don't believe the plants possess intelligence. They destroy all the birthplaces of the plants. The plants left then learn to communicate with the earthmen. You can go in many directions from here, e.g., a fux-human relationship; try to save the balloons, leave extremely saddened and leave the planet to itself; etc. Have a story in which one or both groups learns it needs to destroy the other group to survive.

SCOTT H. HOCHWALD
Caltech
Pasadena, California

To account for the presence of two intelligent races on Medea, suppose that the balloonists and fuxes are different life stages of the same animal. This could account for as follows:

(a) female fuxes drop their hindquarters;
(b) balloons drop sperm and/or ova at random to land in the hindquarters and fertilize them;
(c) hindquarters nurture the young fuxes;
(d) adult fuxes who have already dropped both sets of hindquarters and reach ''neuterhood,'' migrate to the cold regions to spin ''cocoons,'' and become balloonists;
(e) meteorological phenomena (prevailing winds) always push the balloonists back towards the cold regions.

The two cultures are unaware of their common generation, are unaware of the whole process of metamorphosis. Or, a further offshoot of this is that there is a transmission and building of knowledge in the races through the above processes. Or, the one piece of knowledge the balloonists and/or fuxes can give to humans is the reason why, metaphorically, salmon swim upstream to spawn and birds migrate thousands of miles to rear their young.

FRANK MACCARONE
Torrance, California

Wouldn't free hydrogen in the atmosphere inhibit clouds, and thereby stop lightning? This would make balloon creature destruction by lightning impossible.

RICK SHIELL
Pacific Palisades, California

The start: the world is post-industrial ''liberated'' in Zen sense, so only sin is ignorance, but implicitly a world-wide hypocrisy. Then a report back comes from an unmanned probe of a world that could support earthlife. The probe is sent out many years earlier, but the message is garbled in such a way that interference by a motivated intelligence is inferred on earth.

Immediately, a manned expedition is mounted for knowledge for religious motives—so no democratic assent is needed. Part of the effect of contact is to show that the "liberated" man still operates on human and thus provincial premises which are enlarged by study of the alien system.

RICHARD COLEMAN
Department of Psychology
California State University
Northridge, California

Weather to climate: Argo's gravitational force pulls up a continental mass in the middle of the inner hemisphere. The continent would have a comparatively uniform upward slope with a central mountain in the middle reaching into the upper atmosphere. Moisture-laden winds would sweep across the sloping plain to the peak. The plains would be dry, but due to the altitude at the mountain, immense clouds would form dropping huge amounts of water on the mountain slopes. Water in the middle of the desert would be another factor in the mountain's holiness. It would also provide the source of the streams and rivers which would carry the balloons' "seeds" to the sea to grow into young balloons. The major part of the lightning would be generated by the continual rainstorm at the mountain. (Death = birth) This ties together the lightning destruction of the balloons with the production of new balloons. The seeds would germinate and grow on the trip downstream. When they reach the sea, chemical-metabolic changes cause them to inflate and rise into the air, where they are swept by the wind inland to continue the cycle. Postulate the balloon "seeds" retain some memory of the parent's life-experience, including the death-birth experience. This would be an immortality of experience if not life.

A fux who wanted to become a holy neuter would go to the holy mountain, find a downed balloon whose seeds had been washed away and eat it. When he died his kin would eat him raising their intelligence and their social status in the fux community.

DIANA MYERS
Los Angeles, California

The balloons consider the fuxes no more intelligent than we consider porpoises. They consider fuxes a food source, which they don't need in quantity due to their slow metabolism. They do beneficial acts for the fuxes, like guardian angels, to make it easy to secretly eat one from time to time. The humans might object to one intelligent species eating another, or a human religion might develop from the apparently loving generous relationship between balloons and fuxes. Then one man discovers the truth. What to do?

DOUG DIGGLES
Redondo Beach, California

I would suggest that the balloon creatures do communicate through color changes in their surface. When the humans bring in their spacecraft they destroy quite a few balloons thereby making themselves gods. After landing, the humans emerge and the balloons discover that their gods cannot even control their emotions, or their comments (through blushing, temperature changes or general body metabolism). Confronted with this, the balloons lose faith in themselves and their lifelong (eternal) beliefs when given the knowledge that the very circumstances which control their lifestyles can be controlled by creatures that cannot even control themselves.

CRAIG MAUTNER
Los Angeles, California

Window opens—window closes. An earth settlement established on Medea—simply out of scientific curiosity in an age of many colonies on many planets. A feral child raised by fuxes, vaguely telepathic beings who are of a sub-human intelligence. This child learns to telepath and thus can communicate with the superior intelligence of the fluently telepathic balloons.

The most important part of this telepathy relates to Mr. Sturgeon's window . . . This would change humanity, as language would possibly make the apes human. This new telepathy would only be available to those under a certain age. But as this new generation grows up (remembering they are all in communication with the group mind of the balloons) it is vastly but secretly (no better word) different from its parents' generation.

This new generation is the one which is growing up in the Medean colony. As it grows it is a new humanity which will conflict soon with the older generation and even later conflict with the people back on Earth (possibly).

JEFFRY P. BROWN
Glendale, California

The balloons have no concern with the fuxes. They are purely philosophical creatures concerned only with reaching Nirvana. After they emerge from the sea and become airborne, they use their tentacles as a steering apparatus like a rudder, and as an air brake (like a sea anchor on a raft). They constantly approach the "high-hot" point but at a controlled rate. They merely contemplate and meditate towards Nirvana. When they finally reach Nirvana, they have fulfilled their existence, reel in their tentacles, approach the "high-hot" point and explode, releasing their essence to be carried back to the sea by the hot winds. The lightning is a method of natural birth control. Most of the balloons would be destroyed by it, but the few to get through are enough to allow for the continuation of the species.

GARY J. BAIL
Canoga Park, California

I really don't like the idea of the balloons picking up the fuxes, mainly because it would look so awkward and both species appear graceful in the picture; but if there is to be a symbiotic relationship, the fuxes could be the means by which the balloons travel from one specific place to another—thus getting around other than at the whim of currents and avoiding the tendency of being drawn toward the destructive center.

The girl in the picture seems involved in much more than looking at the balloons. If they are wise, then that could solve the riddle of what has brought humans to the planet. The humans wish to learn. They are seekers of wisdom, and the balloons are their teachers. The problem could be that this disrupts the relationship between the balloons and fuxes, thus placing in peril the planet's ecology or at least setting off a competition between fuxes and humans.

There could be an examination of relative values and I think there is room for moralizing if not too soupy.

STEVE WEISS
Encino, California

The civilization of Medea is divided into three sections. (1) the fuxes, (2) the balloons, (3) the humans. In this the three ''peoples'' depend on each other. The humans have arrived with a lack of food and the fuxes do not have our advanced technology. The balloons are almost unintelligent and are servants for the fuxes and serve as scouts in the search for areas which can be cultivated (Medea's terrain is extremely rough and can only be surveyed by air). Therefore, the fuxes raise food for the humans (it is edible, contrary to Frank Herbert), because the humans aren't quick enough for the chore (remember how fast life grows on Medea), while the humans trade their technology in the form of ? (tools, jewelry, transportation, weapons, etc.).

DAVID BRUMER
Santa Monica, California

Put a tiny baby into the fux culture so it can be raised by them, to truly understand them, as best we can, and the grown child transmits his/her understanding to humans on earth.

The intelligent balloons idea has been done almost to death.

The balloons could be completely dumb and without intelligence.

They are a food for the fuxes.

The balloons occasionally drift or travel to the cold side of the planet, freeze, and drift in a form of suspended animation till they return and thaw. Some are destroyed by accident.

Don't try to bring the whole transcendental thing to completion. Each take a view of the elephant and end up not knowing, it's bigger and more wonderful than anyone of us can imagine or comprehend.

BRUCE MENSINGER
Los Angeles, California

The shrews and other life forms from farside metabolize hydrogen when the temperature of farside makes it more available, and they transfer it to the balloons by a migratory symbiotic relationship.

Does the radiation belt of the primary fluctuate from grave stress of the binary? What about proton radiation overpowering Medea's magnetic field and creating periodically deadly conditions for humans that trigger biological changes in the balloons.

DOUG CREPEAU
Hollywood, California

Since all astronauts are servicemen or soldiers first, and since they have come to rape this planet of natural resources, they aren't initially interested in the fuxes and spheres. But soon after running out of food they become somehow dependent upon the fuxes. In this case a power triangle develops among the balloons who "rule" the fuxes, on whom the people are dependent. At the same time, the relationship between the spheres and fuxes is being changed by the people.

MERLE ROGERS
Whittier, California

Eating fux creates a phenomenon in man that he cannot forget its mistakes and at first this is good. In that, one doesn't recreate his mistakes and because of this becomes popular. But in time this creates confusion and eventual death in people and since the fux is the only food, people approach perfection, death and confusion all at the same time.

MERLE ROGERS
(above)

Since the balloon creatures are considered the more intelligent of the two, the balloon creatures might possibly want to insure this relationship. It could be in the way of a chemically induced agent released from the balloon creatures through an excretion or the sound emitted from them which would act as an intellectual soma (forgive me, Mr. Huxley) thwarting any advancement of the fuxes.

STEVE HAHNO
Santa Monica, California

Why couldn't the balloons propagate in "spring" and "fall"—move toward "summer" (because hot air warmed by the planet rises, the cold air on the "dark side" stays down, causing the wind current). Some escape the fertilization during summer and escape into space.

ROBERT KURTZ
Los Angeles, California

Make the fuxes sexually attractive to humans. Suppose the ultra-violet produced by the earth garden lights acted like a narcotic on the balloons or fuxes. If you rather, the 60 cycle flashing of the garden lamps could yield a ''strobe light'' effect. A bacteria symbiotic with the native fauna of Medea stimulates the human immunological system to grant eternal life.

The eggs of the balloons could be blown through the hot region for incubation and lose their buoyancy over the equatorial sea. The eggs would bud (or whatever) in the ocean. The balloons could be the ''blooms'' of the mother plant growing in the sea.

Ted: How would the ''stuff that goes through the window'' be communicated to earth? Through language? Or would the ''ability'' itself be the mechanism?

W. S. FINKELSTEIN
Glendale, California

When the human colony first lands they don't have enough solar cells for what they term sufficient energy production. Unaware that the balloons are aware entities, they discover the balloons contain hydrogen—which can be used as fuel. They grab many balloons—stopping when they discover the balloons are sentient. But the balloons don't realize the earthlings have stopped, the main reason being that the Earthlings *still* use hydrogen for fuel—but hydrogen they produce themselves. The balloons have established a custom over the years—when one is very ill or dying, it tries its best to come down near an earth settlement's heat source, thereby igniting and destroying either humans or settlement property. The custom has aspects of the kamikaze ethic.

WINA STURGEON

If the fuxes do take particular balloons as guardian angels, they would be migratory nomad-types who follow their guardians. Lightning, since it can destroy the balloon/angels should be considered the appendages of the ultimate ''god,'' by the fuxes. When the earth people's ship lands it could be taken as solidified lightning and might replace the balloons as the ultimate physical representation of ''God'' on the planet. The fuxes would then begin a mass migration to the spaceship. This would be the first time in their history that the fuxes migrated to a common place. It would be a major disruption of their system/cycle.

GLEN QUASNY
West Covina, California

Possibly, have the balloons smaller than the fuxes and have the fuxes grab a balloon occasionally to get a ''high'' by inhaling the gas. This practice can be followed by humans.

MIKE DAHLIA
Glendale, California

If scientists know (3 centuries?) ahead that the earth is to be destroyed by ——— there would be the life-death need to colonize another world. However, the centuries of warning give time for limited exploration. Explorers from Earth arrive on Medea. The fragile benevolent balloons try to help them but the fuxes have the one goal of getting rid of man. Not so much to get rid of man as to gain back their control of the balloons.

Explorers from Earth have been to many other worlds but have never found one as desirable as Medea. However, the struggle to make a place for themselves there and attempts to help the balloons get some order on the (also doomed) planet. Covers more aspect than physical battle.

Suggested: (1) Reason for exploration and reason for desire to colonize. (2) Balloons are fragile, benevolent, vulnerable (see specs: religion). (3) Fuxes are dying, desperate, need balloons for ?? (4) Medea is nuts and has to be fixed, first in spite of cost in time, making its last chance.

M.A. WALL

Scenario: Corporations competing in a marketplace of knowledge. Each scouring the universe for sentient species from which to draw knowledge of science, art, philosophy, etc. Knowledge is the common currency.

Two competing enterprises discover Medea simultaneously, and both discover that the balloon creatures have a highly developed culture. What can the corporations offer the balloon creatures for their valuable knowledge? How will the creatures react? How do the two cultures communicate effectively?

R. CLARK

Each writer tell their story, their experience of the planet. Make the book a collection of stories about the same place, Medea, and human, fux, and balloon experiences of the planet.

BRUCE MENSINGER
Los Angeles, California

I like the Bucky Fuller air-circulation idea. Can anybody do anything with yet another civilization (fuxes that glided in or balloons that tethered themselves or a partnership of the two) living in the more moderate conditions inside there?

Also like the idea of balloons getting nutrients (vitamins?) from remains of exploded balloons. Nice parallel with fuxes eating discarded parts of each other.

Paragliders: What if balloons learn to survive final religious dissolution by gliding until lightning-stroke wound heals?

DOUG HENRY

The balloons are the larval form of a higher intelligence. Man has come during the end of one cycle. The method of movement is yet to be determined, but if they could rise and descend, they could rise above the wind currents. How else do real balloonists do it?

PAUL NICHOLAS BOYLAN

First—make the balloons telepathic—mass telepathy (something like the Martians in Olaf Stapledon's *Last and First Men*). This gives them a reason (evolutionarily) for having intelligence, as there would be a constant interaction between them. If you eliminate the telepathy idea—you can give the balloons a thin, but complex musculature by which they could do many things—control their own density and therefore motion (thus musculature surrounds their entire body and could in fact compose their outer 'shell'). They could communicate by similar methods as humans if they had some space inside this musculature which is not full of H (which I assume is totally closed off from the outside). They could 'ingest' air and by manipulating muscles they could 'talk.' If you have many, many fuxes, and only a few balloons of greater intelligence, you have the potential for a slave fux population, if you give the balloons the ability to manipulate them (God only knows why the balloons would want to manipulate them). They could do this through some sort of psychokinetics—although that would preclude any reason for needing the fuxes as a slave population.

JEFFREY P. BROWN
Glendale, California

I hate to point this out, but the fuxes' method of reproduction (as decided to this moment) will cause total extinction of the species, because it takes one corpse to make one kid. If any "males" die in circumstances that would make them inedible.

ALAN WINSTON
Pacific Palisades, California

Q. What marvelous commodity would be available on Medea? A. The attaining of Torisa (Tr: roughly something like Satori) (The opening of the window). Q. What is situation on earth? A. The counter-culture (of today) has taken over, but they have retained and controlled technology so that they can search for higher wisdom. Q. Where conflict on earth? A. The old majority remnants of the consciousness and mentality are a group opposed to mind expansion, space travel, etc.

BEATRICE KOEPPEL
Burbank, California

(1) The concept of 'female' sex evolving into a 'male' sex, while novel, ignores the question of how this biologic system developed, i.e. which came first, the chicken or the egg. Who was around to fertilize the first female? Self-fertilization! However, this has a rather low success value in

evolutionary biology. Your fuxes are all going to end up hemophiliacs. Enlarge gene pool is the key to success.

(2) Your idea of consuming other organisms or cannibalizing is so unscientific, so unlikely and unproven that I am stunned you all banter it about seriously. That planaria experiment is so cliché-worn, and displaying results that as often confirm this learning-by-feeding as not. Read Skinner and Tinbergen and Lorenz; learning and knowledge, while chemical at their root, are *not* located in the genetic material. The chemicals by themselves are *not* knowledge, the way they are held and released by the physiology of the beings *is* knowledge.

(3) If balloons get their H_2 from electrolysis of water, they can then establish an electric potential of over 10cV. Though they are over all electrically melitral, they still will highly attract electric discharges. And if you don't think high hot winds whipping over the land wouldn't produce static charges, you better bone up on your physics.

(4) Don't forget Coriolis force affecting wind patterns. The planet does rotate, else it would not keep one face toward the Jovian planet as it revolved.

(5) Stop with the path-weary Earth analogies. Take them (i.e. sharks and suckerfish) and really bend them.

(6) Human intrusion must always be disruptive—but must it always be destructive?

(7) Why did Man go there? Only very reluctantly! How about that? The earth evolved into a controlled, Zen state of enlightenment. It's not interested in going anywhere externally but higher internally. But, undeniable communication from space, from this binary star, comes to us. The message is uncoded and a small group of interested folks volunteer to go see. Society is geared up to outfit them with the applied theories developed over centuries of meditation. So instead of the well used idea of exploring or colonization or curiosity to conquer is gone, the men are there only reluctantly, disturbed by other forces interrupting our meditation in space-time.

MICK APTED
Santa Monica, California

If the religion and/or morals (ethics?) of the fuxes is based on the concept of circularity, some interesting ideas are natural. It would be logical to suppose that the ideal state would be that of the largest and most perfect circle or sphere, fitting in with the floater-worship.

The earth spaceship coming down might have appeared as an ellipsoid. The people coming out could either be beings approaching perfection or fallen-angel-types (depending on your emphasis). Also relate to spaceship killing balloons on the way down.

The fuxes, having such an elaborate religion, would probably include some type of rite of passage. The test involved would be to have the fux leave the Circular Ocean area and journey into one of the polar regions some varying distance (Re: Silverberg). By doing this, she would be in a state of distance, physical and psychological, away from circular perfection, and would thus be tested. (The fuxes have paragliders—perhaps *only* for journey? Fly one way, walk back?)

In the specs, the fuxes are very fast. Humans are envisioned as almost sessile next to them. How is it, then, that a first contact occurs? One idea would be to have an injured fux (on pilgrimage) encountering humans. Her injuries would be of a sort which would slow it down.

Hydrogen. There is little or no free hydrogen (see first page of specs). Balloons have some sort of protection. Suggest charging: would be natural with all the various fields around Medea. A possible plot: charged balloons keep blundering into Earth machinery. Men kill balloons. Conflict with fuxes (and balloons) over religion, etc. Related to charging: Re: illustrations, the balloons are pictured as traveling in packs. Perhaps the varying electrostatic charges help to keep the balloons in a specific herd formation for social or aesthetic purposes. Perhaps the packs are schools for philosophic discussions (Talmudic-type bull sessions?).

Plot idea was raised concerning ‘‘window’’ and destruction of Medean culture with elevation of Earth. We have the character who sees this coming—for Medea. Why does it have to be an Earthman—why not a balloon—a superphilosophical, introspective, farseeing balloon?

MAYER BRENNER
Beverly Hills; California

PART IV:

SECOND THOUGHTS

Poul Anderson—13 August 1977

Now if the stories are to be consistent with each other, obviously we must all agree on some parameters. For instance, do humans going to this planet travel faster-than-light (and if they do, is the magic wand waved for that purpose to be called ''hyperspace'' or what?) or do their ships take decades at Einsteinian velocities? In at least a general way, what is the situation back on Earth—does Western civilization still exist, how much freedom if any survives, what are the dominant countries or is there a world government, etc., etc.?

Hm-m-m, I may as well amuse myself by sketching out a possible background. If you or the others prefer something different, that's fine by me; in any event, more details would be needed.

Earth went through a bad time—the Soviet empire did not collapse without taking a lot of people and real estate with it—but technological civilization survived and even made a rapid recovery. This was due in large part to its foothold in space: Earth orbital and Lunar colonies, asteroid mining, etc. The resources thus made available had the potential of abolishing all poverty everywhere. Of course, things didn't work out that simply, especially since many countries remained saddled with more or less collectivistic governments. The United States was no longer a first class power, and Europe was much enfeebled. Leadership, as well as the greatest per capita income, went to some countries which had taken advantage of tropical locations to encourage investment, domestic and foreign, in space enterprises. Prominent among these were Brazil, Colombia, Indonesia, and Kenya.

Though liberal enough toward business, they were all timocratic, under one name or another, rather than democratic.

They all shared an interest in preventing more wars, too, and had the power to do something about that. Nominally, the World Federation was a loose union of all nations. In practice, although it seldom cared to meddle in the internal affairs of other states, the Big Four coalition pretty much ran things to suit itself. This situation was not unpopular; most people everywhere were glad enough to trade sovereignty for peace, a rising standard of living, and relatively little interference in their private lives, unless of course their local governments supplied the latter.

Things were somewhat more complicated beneath the surface. The world had not only recovered and gone on to prosper through a vast and intricate technology; it was now absolutely dependent on this. Industrial, agricultural, ecological management *had* to be right, or disaster would follow. Only a very small proportion of people had the capability of maintaining the system and making the decisions. Political questions could not be allowed to interfere with them. Thus the real rulers of the managerial society became its managers, under whatever titles it had. Theoretically, the Technical Authority was just another department of the Union, like the Peace Authority or the World Traffic Commission; in practice, it always got its way.

Space exploration boomed. Probes to the nearer stars were followed by manned expeditions—no faster-than-light, but Bussard ram jets made the crossings in a matter of a few years, ship's time (usually longer, up to a few decades, by Earth time, of course). Though large-scale emigration beyond the Solar System was out of the question, permanent colonies were established on scientifically interesting planets such as Medea. It was obviously far more efficient to have people living there, self-supporting, beaming back information, than to keep ships shuttling. This did mean that all kinds of personnel were needed, not just scientists. Those who went, knowing they would never return, did so for a variety of motives—knowledge, adventure, personal opportunity, disgruntlement at home, and so on. Governments were often glad to get rid of malcontents by granting them berths; occasional criminals got their sentences commuted if they would leave and had desirable skills.

Isolated, except for laser beams whose messages were years old, in strange environments to which they must make many adaptations, the various colonies soon began to develop in separate ways, eventually becoming societies radically unlike any back on Earth.

As for social conditions on Earth, within the managerial frame they naturally varied a lot from place to place and time to time, but there were a few basics. Nearly everywhere, equality of the sexes was taken for granted; marriage survived as an institution, though many marriages were "open" in one way or another; safe, effective chemical contraception was available to both male and female; small families were the norm, with world population fairly well stabilized at five billion. Vast productivity gave almost everyone reasonable comfort and abundant leisure—in fact, the problem was unemployment, since such a small portion of the labor force was needed to run the essential parts of the economy, enjoying tremendous prestige in consequence. Among the majority, all sorts of little businesses sprang up, some of them quite odd; religious or utopian communities got founded, more or less withdrawn from the mainstream; ethnic identities were zealously cultivated; there was a vast amount of ceremoniousness and ritual, even in daily life; professional guilds and unions went in for this too, and developed ''lodge sibling'' feelings among their members which often became stronger than any other loyalties.

Thomas M. Disch—16 September 1977

Looking over the transcript and the picture, I find I haven't departed too far from established possibilities. I think I ought just to note some essential and non-essential postulates in case anyone else wants to pick up on them.

For my story it is absolutely essential that space travel is limited by the speed of light (while communication can be instantaneous, with the right equipment). Medea, by the way, is 50 light years from Earth: I checked it out myself at the Royal Astronomical Society.

Also pretty essential is the age and nature of the Medean colony. My story's set in 2481, long after first contact. I adopted Poul's suggestion that people went there for the sake of Knowledge. When that resource has been fairly well tapped, the frontier moved on, and the remaining humans on Medea by my time are in the nature of slum-dwellers. Urban sprawl as applied to the galaxy. Where are the frontiers of yesteryear? Buried under the slums of today.

Most of the human settlement by this time live on flotillas established in the safe Sargasso-y parts of the ocean. My characters therefore don't come into contact with fuxes. There is a balloonist though, which I've preferred to call a gasbag. Gasbags begin their life-cycle in my story as polyps on a kind of kelp growing in the Sargasso; during periods of solar flare they swell with gas and ascend into the air. They can communicate either by squeaking their valves or (preferably) by color-flow. All these possibilities were broached during the panel, so I didn't think I was going out on any unsafe limbs. There is also a settlement on the darkside continent called Port Backside.

Concerning the general background: the universe is a multi-specific and (so far as can be seen) relatively pacific civilization. Humanity runs the gamut from ordinary people (born or cloned) to highly ''evolved'' and ''modified'' cyborgs (though I avoid the word); there are also data-banks with organic components and some human propensities. The more evolved types seem to be in charge, though my story doesn't actually show them running things.

That is as much as I can think of that may be relevant to someone else. I hope none of it represents a spanner in anyone's works.

Poul Anderson—27 September 1977

Settling down to work out the specifics of my own story, I did at last run the original calculation through again, several times, plus doing some additional. Herewith the results . . . and it would be greatly appreciated if Hal or Larry or Fred would check me this time.

(1) If Argo, the red-hot superjovian, has about 1.5 times the visual diameter of Jupiter as I assumed, then its angular diameter in the sky of Medea is much greater than I said—actually 7.86 degrees of arc, or about 15.7 times the size of Sol or Luna as seen from Earth.

Kelly, studying your picture, I do *not* think you have to redo it on this account. With an artist's intuition, you made the giant planet look quite gigantic enough in the sky.

(2) I took for granted that tidal effects of Argo on Medea would not be great, because it moves through so small an arc of sky. Well, in magnitude they turn out to be (theoretically) some 5710 times what Luna raises on Earth, or about 3800 times what Luna and Sol together raise on Earth.

So I now suppose you'd get one hell of a slosh effect in the ocean and in any seas—in fact, in any fair-sized lakes. They won't be monstrous tsunami-like waves, mostly, but they will be very substantial; since they move not east and west like our tides, but north and south, they'll make for especially violent water in the polar regions. (There will be some east-west component of motion.) In places where topography is just right for setting up a resonance, you can get bores and roosts that make anything we have on Earth look placid.

In addition, you get the varying tidal effects of other moons—they turn out not to be negligible, unless you assume very small masses for all, which seems unlikely.

Actually, Hal specified that Medea is the third major satellite of Argo, which implies at least two fair-sized ones orbiting closer. Needing for my own purposes to know something about these, I've made the following constructions. If anybody objects, please let me know.

The assumption is that a system like this will follow more or less a Bode-Titius law of orbital spacings. Several satellites will be of what we consider planetary size, though Medea is the largest and (I suppose) the only life-bearing one. The closer to Argo they are, the denser—more or less—because the heat of the giant planet drove off the lighter elements during their formation.

Innermost (except possibly for some minor bodies) is *Jason*. Average distance from Argo, 0.39 million km. Period, 18.21 hours. Diameter, 4322 km. Mean density, 5.5 water. Maximum tidal effect on Medea, 0.7 spring tide on Earth. Maximum angular diameter seen from Medea, about 23 minutes or 0.77 Luna seen from Earth. Minimum angular diameter, about 10 minutes or 0.33 Luna.

Second is *Herakles*. Average distance from Argo, 0.732 million km. Period, 46.68 hours. Diameter, 4800 km. Mean density, 5.3 water. Maximum tide on Medea, 7.36 spring tide on Earth. Maximum angular diameter from Medea, 57 minutes or 1.9 Luna; minimum, 9 minutes or 0.3 Luna.

These satellite tides run east and west, but aren't as strong as the figures imply because, after all, the moons are nearly at right angles to the Ring Ocean at closest approach, and most of Nearside is rather dry. Still, they ought to have some importance. Jason is more or less at minimum distance to Medea about every 24 hours, Herakles about every 122 hours.

Moons beyond Medea are much less important, both because of their greater distances and because Farside is mostly frozen.

In general, then, the ocean and the lesser seas of Medea are more turbulent, with more in the way of currents, than I originally supposed. By bringing up minerals from the bottoms, this ought if anything to encourage proliferation and rapid evolution of life; substantial tides might well also hasten life's conquest of the land.

It seems reasonable to me that Jason evokes electrical activity in the atmosphere of Argo, as Io does for Jupiter, and that this has subtle but significant effects on the life cycles of some Medean species (not the intelligent species, at least in my story). Because Jason and Medea have orbits somewhat canted with respect to each other, this effect only comes about every 200 Terrestrial days.

Hal Clement—1 October 1977

I plan to be working the period shortly after man has landed on Medea, and still doesn't know much about it. I doubt that I'll hit the fuxes (most of you would have made book on that) but will probably get involved with the balloons. However, my human characters will probably reach some very erroneous conclusions about them, which will no doubt be straightened out in the other stories. Geographically, I expect to work the north polar region, with the bright, white Castor A & B pair high in the sky, the primary oscillating up and down over the horizon, and sundry dirty tricks being played with the H_2O-CO_2 phase diagrams if I can raise or calculate the necessary detailed info.

Points I will, or may, use: that of Russell Howard from the "written suggestions" transcript—he's right about the tidal bulge's not being apparent from the surface. The ring ocean, which I accept, can be blamed on a nice bit of isostasy resulting from the deposition of most of the planet's water just below horizon from the primary, flowing as glaciers back toward the hot side, and melting as it approached that hemisphere. The whole ring should be seismically quite active, having been depressed by the weight of the glaciers *and* the sediment. Maybe Medea's mantle currents are being externally driven, with upwelling on both sides of the ring ocean—anyway, I'm assuming the ocean, and some fairly high and young mountains in the north polar region at least.

Vincent G. Wiberg's point seems valid, except that I'll probably have them facing solid CO_2 temperatures rather than sandstorms—though I don't exclude the other.

Jim Karnes and several others who seem to expect a good deal of free H_2 in Medea's atmosphere—no way. Granted that it might be produced at a high rate biologically by the balloons, using presumable solar energy in some sidelined version of our photosynthesis, it couldn't last long once escaped from a balloon. At the given oxygen partial pressure, it would oxidize back to water quite rapidly—yes, I know it doesn't in tanks on Earth if sparks are kept away, but that's a different time scale; and the A-type Castor A and B are shining, providing a fair flood of U-V. Also, when a balloon is ignited, by lightning or other means, it won't explode—see the Hindenberg movies. Or try blowing bubbles with a zinc-acid generator, and touch them off *after* the air has been swept out. Fast burn, yes; detonation, no.

I mentioned to Poul and Larry at Worldcon my reason for the small age of the system; sorry I failed to do so originally. The two bright members of the Castor system are A-type stars, the brighter one a good imitation of Sirius. The system *can't* be much older than I mentioned, if it all formed at about the same time and our current theories of stellar evolution are at all valid.

I'll accept Tom's no-FTL, somewhat reluctantly, but it certainly won't matter much to my story—I'll just have to be careful with passing remarks. The parallax figures available to me come out closer to 45 light years than 50, but this is not a very worthwhile thing to quibble about, trig parallaxes being what they are.

Just saw another item on the first page of the written suggestions; don't see why I didn't mark it on the first run-through. The balloons do *not* use the hydrogen for energy by oxidizing it to water, unless some other organism is using a more basic energy source like the suns to liberate the hydrogen first. This would add the problem of how the balloons get it from the producers—unless the latter live symbiotically in their bodies. In that case, you might as well say the balloons manufacture their own hydrogen, as was implied earlier; you've simply added a detail of engineering to the picture. Some of our wilder "environmentalists" to the contrary notwithstanding, hydrogen will never be a *primary* energy source chemically on any planet with an oxygen-rich atmosphere—just as, in spite of a recent letter in a local paper, the terrific pressure of the ocean depths is not going to run any turbines for us.

Larry Niven—10 October 1977

from the outline to "Flare Time":

The notes on Medea are *too* complete. Violent inconsistencies. I make certain assumptions.

The local fuxes are as described in *my* notes. Female phase is eight-limbed and six-limbed; second clutch of progeny exposes the male organs for a biped phase; post-males are the repositories of wisdom. Contraception is easy: the new males are half-mad and can be treated as insane, i.e. restrained. As the tribe needs, they are allowed to breed few times or many. They don't fly.

No blimps or dirigibles are used on Medea. The storms are too chancy and violent. Thus we can speak of the balloon beasts as "balloons" without ambiguity. Size varies from basketball up. Near the Cold End they are huge; after all, they get as much UV from flares as anyone, and mass conserves heat.

Balloons are not intelligent; they couldn't lift a brain (except the big ones) and dissection shows it isn't there. But the balloons cluster, linked by self-generated spiderweb. There is speculation that a clump may constitute one great brain.

Space travel is by Bussard ramjet.

Some further assumptions I forgot to write down—

1. I can't buy the balloons as intelligent. But I don't want to rain on your collective parades, and you (panelists, at least) seem to want to make that assumption. So:

   I'll pick up Medea seventy years after the establishment of the colony/research center. At this point there has been no communication with the balloons. They've been dissected, and (as expected) they don't have anything like a human brain (and couldn't lift it if they did). But— they link by something like spiderweb, into large clumps. If the web carries signals, they could form a single mind. Purely speculative. But— the fuxes say they're getting their weather data from the balloons and they can prove it. Is it from observation, or communication? They don't understand the question.

   Summarizing: Medean humans *don't know* if the balloons have minds.

2. The fuxes don't fly. The flying beasts are built quite differently. (I wish Harlan had given you panelists more time to read the damn notes. But then, he only gave me ten hours to *write* my piece.)
3. Medean ecologies come in pockets. The biggest interrelated ecology might be as big as California; average, the size of Death Valley (which *is* a unique ecology). Spillover from other established ecologies, from high winds and tidal slosh and migration, means that a unique ecology on Medea is destroyed somewhere every five years or so. Reasons are obvious. In addition to the things that separate ecologies on Earth— distance, mountain ranges, temperature differences, oceans and rivers— we have Medean temperature differences, the one-way flow of the Ring Ocean to the Hot End, all manner of special conditions.

4. Hot End, Cold End, North Pole, South Pole, Local Equator, and Far Equator. If you prefer different terms for the cardinal directions, fine; you'll be treating different eras. Languages change.

5. The Ring Ocean flows always toward the Hot End— and it is more nearly fresh than Earth's. Reasons:

   (a) The planet is younger. Less time for salts to dissolve.
   (b) But more violently tectonic. Salts would dissolve faster.
   (c) But tidal slosh continually spills seawater into the Hot End borderlands. Seas recede, leaving tidal pools to dry—and they dry *fast*. The vapor gets carried to the Cold End, deposits in glaciers, and the (fresh water) glaciers migrate.
   (d) Result: a somewhat fresh ocean, from which soil can be dredged and sterilized for use by Earth's plants. (UV and terran excrement to sterilize.) And a ring of salt mountains in the Hot End, bordered by a Ring Ocean border that is very salty. We have here another gradient to separate ecologies: what degree of saltiness can a given beast or plant tolerate?
6. The balloons do get carried to the Hot End, mostly, and they do breed in the ocean. But a few can tolerate low pressure and high altitude, can be carried to the Cold End to die and breed. (If they had only one breeding ground, they could be wiped out at any time by some migrating menace!)

PS: Fuxes were Bronze Age till humans came. Expansion has been swift. Fux & human teams put up buildings in both territories, for instance.

Poul Anderson—15 October 1977

1. I am presuming that balloons, as well as fuxes, are individually intelligent creatures. *Pace* Larry, let me point out that, while the balloons

haven't much mass, they have plenty of volume, thus ample buoyancy, especially in an atmosphere denser than Earth's. They should have no problem lifting a kilo or so of brain tissue, which is all that we humans need . . . However, in other areas of Medea, there are related species which are not intelligent, or which have the kind of group intelligence that Larry proposes. (All of these could coexist, given an entire world. Here at home, just consider humans vs. apes, apes vs. monkeys vs. lemurs vs. lorises, not to mention extinct forms like australopithecus.)

2. I agree that "fux" and "balloon" are silly, and therefore my human protagonists call them "dromids" and "ouranids" respectively—from the Greek for "runner" and "heaven-dweller," you know. In fact, one of my people refers scornfully to "fux" and "balloon" as being words that only ignoramuses would use . . . However, his could be a losing cause; the silly words might prevail, if you are committed to using them. (Consider: nowadays, even in learned journals, "data" and "media" are commonly used as singular forms. The lady who taught me Latin, not so terribly many years ago, would have had something to say about that!)
3. For my purposes, I equip the xenologists with small transceivers that they persuade a few natives to wear; these transmit neural impulses back and forth through a computer link. It amounts to a VERY crude form of telepathy. Only a few perceptions come across, quite distorted, nothing subtle—except on a completely subliminal level.
4. Humans on Medea do not plan to take it over, as Europeans took over America or (still more) Australia. In fact, they don't think it would even be practical to try; too many areas of the world are too hostile to them. They have laws limiting population. . . . Of course, this could change too, in a later generation than the one I'm writing about.
5. To cross the approximately 50 light-years between Sol and Castor C, a spacecraft traveling at a constant one gravity of acceleration, turnover at midpoint, would take about 51 years external time. A Bussard type of ram jet can, theoretically, do this. Because of relativity effects, time inside the ship would be much shorter; I calculate it as a little under eight years. This is still quite a while to spend traveling—and I doubt that physiology would allow you to shorten it very much by increasing the acceleration—so I'm assuming suspended animation en route and, that being the case, also assuming spacecraft which don't make the trip so fast. I am *not* assuming any kind of communication faster than light.

   Of course, this too could change with time; spacecraft might be greatly improved, tachyons harnessed to carry messages, or whatever a writer wishes to suppose.

Hal Clement—23 October 1977

If anyone cares, under Medean sea level atmospheric pressure and near the freezing temperature of water, a cubic meter of hydrogen can support 2.9

kilograms *mass* (do your own adjusting for Medean gravity); a balloon two meters in diameter could carry about twelve kilograms mass, including his own. If anyone disagrees with that figure, remember that the molar volume of a gas on Medea is only a little over nine liters.

Frederik Pohl—23 October 1977

Medea did not spin in its orbit like a proper planet. It just squatted there, rumbling around its ellipse with one eye watching the primary over its shoulder.

Consequently it did not have just a north pole and a south pole. It had an east pole and a west pole, too, although those two poles happened to be on Medea's equator. An astronomer would have argued, primus, Medea *did* rotate, secundus, there was no such thing as an east pole, tertius, only an idiot could have imagined he was standing on it.

To which the idiot standing on it would have rejoined: 1, nonsense, 2, nonsense and 3, go screw yourself. It doesn't rotate because I can *see* it doesn't. The primary climbs up over the horizon and slumps down below it, taking a couple of months each way. That's it. It doesn't go around. To him, the east pole was where the imaginary line of the equator crossed the broad band of the terminator, and that was where he was.

Facing north, he could look left to Medea's hot side, sultry and steamy as Bedford–Stuyvesant in August, complete with the stink of decayed garbage. Turn right, and it was darkside, like Duluth on New Year's midnight.

(Darkside. What life is there lives on fallout from the sunward side. Little grits and flakes of organic matter float across the terminator on the wind, and life (if any) survives on the sparse rain of manna from the skies, like echinoderms at the bottom of the Marianas Trench.) (There isn't any light, therefore no photochemistry, therefore no plants. Except that there could be, maybe, something like algae (driven by heat, not visible light) in the vicinity of geysers or hot springs—if absolutely necessary for plot purposes.)

Around the East Pole, the waters were still. Not only because they were usually frozen solid. Medea slipped and stumbled as it rolled around the primary—not much; just a degree or two*—and the little libration produced some great big tides near the Heat Pole. A degree isn't much, but over the bulge of Medea it came to a couple of hundred miles*, which meant that every molecule of H_2O tried to slosh first this way, then that, two hundred miles* at a time, and the tides that came out of all that ran 900 feet high. But not at the East Pole. There they were only inches, and too slow to measure.

(On the Darkside, the tides would be as great as at the Heat Pole—except that any water is frozen. So what you would get is immense icequakes, like glaciers calving into bergs.)

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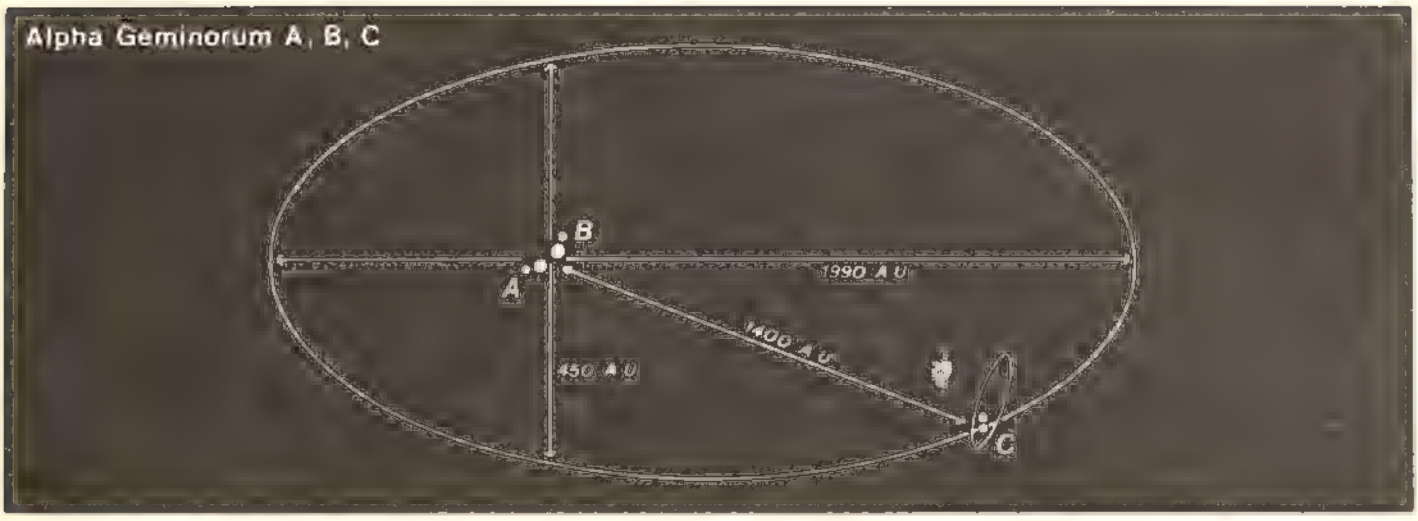
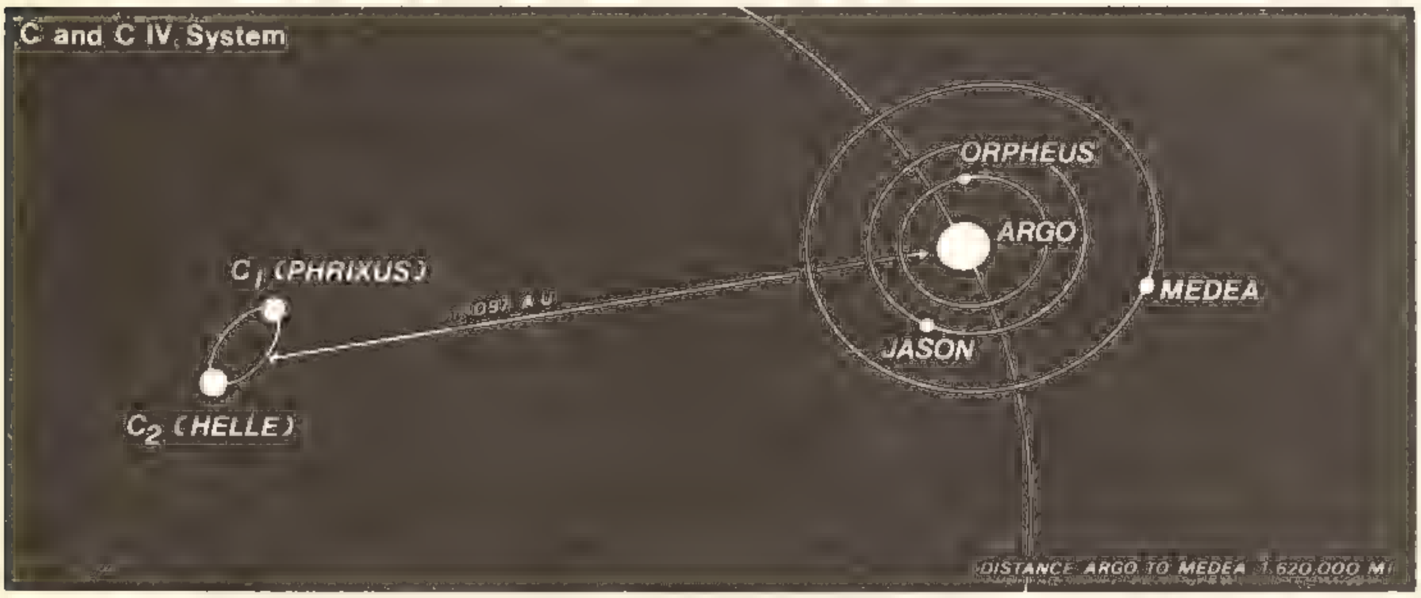
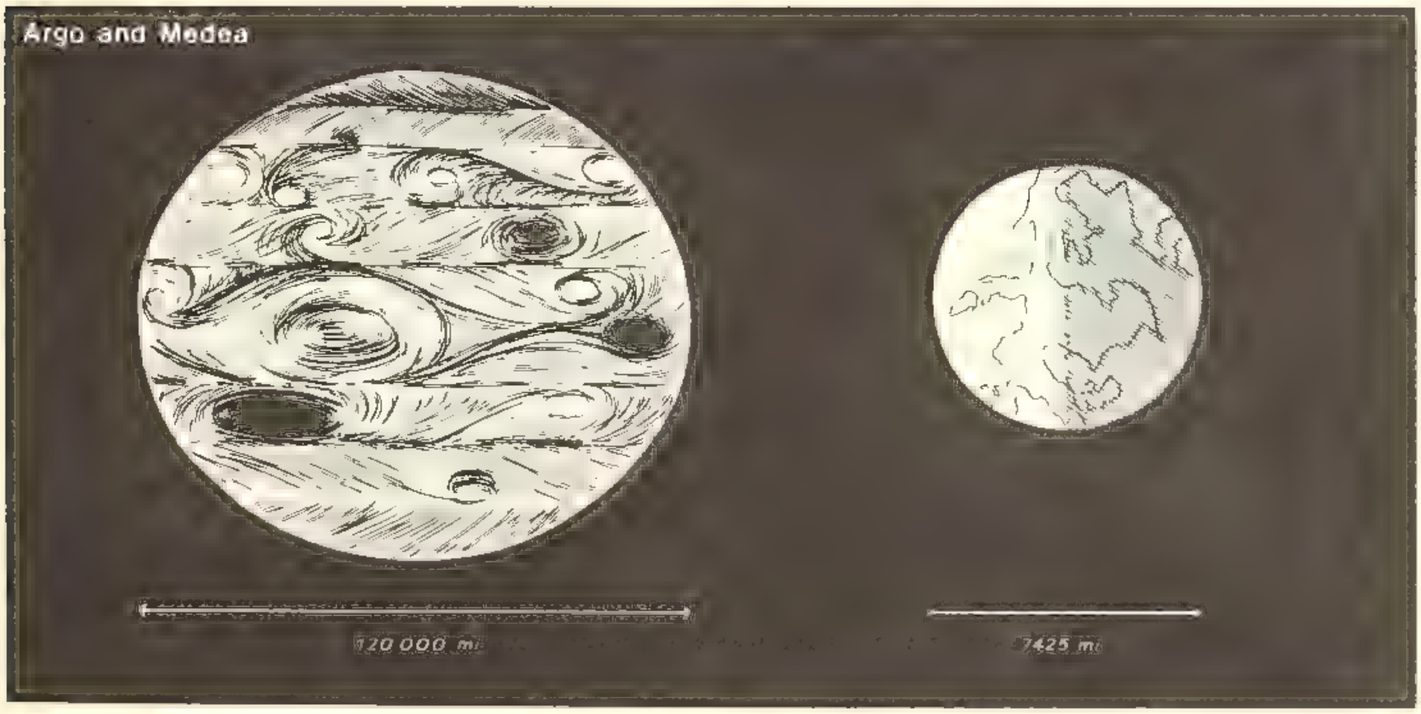
*Harlan: I don't remember how much libration is specified I'm assuming ca. 1°. If more, adjust numbers accordingly. 1° = 200 miles, more or less.


Alpha Geminorum A, B, C

B
A
1990 A.U.
1400 A.U.
450 A.U.
C


C and C IV System

ORPHEUS
ARGO
MEDEA
JASON
C_1 (PHRIXUS)
1.097 A.U.
C_2 (HELLE)
DISTANCE ARGO TO MEDEA 1,620,000 MI


Argo and Medea

120,000 mi
7425 mi

PART V:

THE STORIES

FARSIDE STATION

Jack Williamson

1.

The office intercom grunted.

"Olaf?" It was Sakuma, head of Northcape Engineers. "Clients for you. A couple of motherworlders, pretty fresh to Medea. Want a research station built. I told 'em you could do it."

"Where?"

A silent second.

"Listen to 'em, anyhow," Sakuma said. "They're serious. Well funded. We've talked about the risks, and they're still determined. They want to see Farside—"

"I've seen Farside. Too much of it."

"Not the part they want to explore. The Banda Basin. Where the firebags go to die."

"No!" He shook his head at the intercom. "Send 'em anywhere else."

"Tried to. Tried to tell 'em why it's crazy. But I can't put 'em off. They understand the odds and they want an engineer."

"Give 'em McBent."

"Won't leave his wife. Says this thing could take a year."

"Tell 'em—"

"I've told 'em. They're coming up to see you now."

His office was high in the mirrored tower the Northcape Engineers had put up to overlook the streets they had paved, the mills and smelters and hydroponic circles they had designed, the great tidal turbine complex where they had been the prime contractors.

A bare little cell, because he was a very minor member of the firm, who chose to work in the open. But he loved the view. The thermal roofs of Chong, a forest of silver cones. The landing strips and piers around the river bend. Best of all, the High Cascades.

Though they were twenty kilometers away, he often imagined, at times when the city was quiet, that he could feel the vibration and hear the ceaseless roaring of all those cubic kilometers of tidal water pouring down the black cliffs that marched half around the horizon, exploding plumes and foaming raceways and tall walls of falling water, tawny when the twin suns shone, plunging down into boiling golden clouds.

It was Darkday now, the double sun behind the planet. Low in the south, Argo burned red on the mirror roofs and turned the falls to a deluge of blood. Brighter than Argo, dull red and pale green, the aurora rippled across the moonless sky. Pulling himself away from that familiar splendor, he turned to wait at the door.

Nearing forty, he was thick-set and muscular, with close-cropped sandy hair and weathered, flare-tanned skin. His pale blue eyes had a wary squint, alert for the unexpected. Dressed for Darkday, he wore his field outfit: high thermal boots and hooded thermal coveralls, flaremask pushed back on his head. The bulging ruby goggles made him look a little sinister, like some big-eyed hotlands monster.

The clients were coming off the elevator, escorted by Sakuma's office abo, a tail-clipped rank-smelling post-sexual male with an unpronounceable name, that let people call it Charlie. Norlund resented the abos in Northcape. Stinking six-legged vixens that came apart like ugly insects, dropping off two-legged wombs until they became sex-crazed males and finally burned-out neuters. They weren't native to this polar coast, but now there was no keeping them out. They learned too fast and worked too cheap. Charlie was actually reading for its own degree in engineering.

Norlund shrugged, resolving not to be bothered. Sensitive even to the Northcape climate, the fuxes had to keep indoors. Certainly, Charlie wouldn't be joining any Farside expedition.

''Engineer Olaf Norlund.'' Charlie's voice was a sweetly accurate imitation of the girl who had made its learning cassette. ''Bring honored clients of Northcape Engineers. Dr. Aum Padhai, Ph.D. Dr. Leda Lovato, Ph.D. Doctors arrive from Earth five years now, seeking construction of Farside station.''

He shook hands with them while it leaned back on its surgically shortened tail, red tongue lolling, grinning at him. Its atrophied male organs hung naked, slack and black. The long bright eyes had a malicious glint. Amusement, perhaps, at his predicament. He could never guess what the fux was thinking, but he suspected that it understood too much.

''Thank you, Charlie. Mr. Sakuma wants you back right now.''

He ushered the visitors into the room, trying to seem more courteous than he felt, and shut the door on the abo. They went to the window before they came back to the chairs at his desk, the girl exclaiming softly in her wonder at the falls. He liked her voice.

Dr. Padhai was tall and gaunt. Handsome, perhaps, in a haggard, restless way, but also disturbing. The livid scar of some old wound slashed across his dark cheek and forehead, letting his right eyelid droop, making his intense black stare strangely disconcerting. He had a penetrating scent of something like camphor.

The girl held Norlund longer. She was slim enough, but ripely inviting, her olive skin aglow from the Northcape chill, her hair long and sleek and dark. In this light her eyes looked violet, warm and trustful. She wore a bright platinum bead nestled against the wing of her left nostril. Younger and lovelier than any Ph.D. he had known in his few semesters at Medeana University, down in the hotlands, she was far too fresh and tender for the Banda Basin.

''Mr. Sakuma tells me you're trying to organize a Farside trip.'' Sitting back at the desk, he tried to be diplomatic. ''Technically, of course, Northcape itself is a projection from the Farside continent, but we're protected here by the coast range and the Mushanga Sea, and we do get heat from Argo. Even here, the cold can be severe enough, but it gives you no idea of the climate beyond the glaciers—''

''The difficulties have been explained to us.'' Padhai's voice was harsh and hoarse, as if from too much shouting, his accent a little hard to understand. ''We accept whatever risks there are.''

He turned to the girl for confirmation.

''We do, Mr. Norlund.'' Her own soft Earth accent was more alluring, her tones firm and pure, so warmly melodious that he thought the fux should have had her for a model. ''Please don't try to delay us. Just remember what we've given up for this—our world and our time. Sixty Terran years to get here. Sixty more to go back, if we ever do, to a world we wouldn't know. But we do know what we want.''

She touched the platinum sphere against her nostril.

''You must understand that we are Seekers.''

He nodded, not trying to understand. His people had been gone from Earth for six generations, and he disliked even the Medean hotlands, with their swarming races of fuxes and gasbags, their teeming predators, their human colonists nearly as strange. Northcape was his home, Earth too faraway to matter. At the university, he had dropped the dull course in Terran history after the first idiotic test.

''Seekers of truth.'' Padhai's hollow voice was loud and impersonal, as if from too much preaching to unbelieving multitudes. ''Seekers of life. Seekers of God.'' He lifted his lean left hand to show a symbolic ring, a bright metal globe mounted on a black oval ground. ''I suppose you would call us mystics.''

Norlund nodded again. The hotland campus had been a baffling buzz of queer phrases and queerer ideas which he had commonly ignored—though there had been one hot-blooded redhead, nearly as alluring as Leda Lovato, who had led him to the brink of baptism in the scummy Ring Sea.

''Try to understand.'' It was less request than command. ''My earlier ancestors had been seekers of oneness with the whole universe for many generations. I cannot say that they were wrong, but the goals of later searchers changed when the great radio telescopes began picking up evidences of other minds in our galaxy.''

Carefully, Norlund controlled his skepticism.

''I've read that much history,'' he agreed. ''The motherworlders detected radio waves they thought were signals. They began sending ships to meet the senders. That's how we humans got to Medea.''

''A turning point in the evolution of the human spirit.'' Padhai's dark eyes gleamed, and his hollow voice had the ring of worship. ''The old quest for nirvana had been a difficult abstraction. For many, far too difficult. Suddenly, when those signals were received, we could begin to look for cosmic truth, for communion with a universal intelligence, on this side of death.''

''You didn't find it on Medea.''

''Perhaps not. Perhaps because we forgot to look.''

''Is that why—'' He turned to the silent girl. ''Have you come to hunt for cosmic truth in the Banda Basin?''

''We have.'' Her limpid eyes made a mute appeal. ''Don't laugh.''

''We're Seekers, remember,'' the dark man said. ''The reach from Earth into space is the noblest thing our race has done—at least as it began. Later, tragically, that supreme first goal was almost forgotten. Our destined universal union has yet to be achieved, but it must be.''

''If those old space pioneers came looking for universal harmony—'' Norlund paused to soften his sardonic tone. ''The supposed signal turned out to be natural radio emissions from the hydrogen envelope of Argo, modulated in odd ways by the magnetic fields of the flaring suns and by Medea and Argo's other moving moons. The fuxes and cosmic truth!'' He laughed. ''As for communion with the firebags—''

The girl's hurt face stopped him.

''You must understand our disappointment.'' Padhai was still commanding. ''Recall the transit time to Earth. A laser beam takes fifty years to carry news there. The ship took sixty to get us here. We set out on reports now a century old. We arrived expecting to build upon a hundred years of progress—''

''And you found the hotlands!'' Norlund grinned at the contrast. ''The abo cultures wrecked by contact with the human—if the abos ever actually had any culture. The humans scrabbling to survive in a world they weren't made for, most of their own culture lost. Trying to live on the natives, getting their highs however they can, waiting for the next ship from Earth.'' He made a face. ''I've lived down there and I don't like it.''

''We had hoped for more.'' Padhai nodded solemnly. ''Though the first explorers found no high technologies, some of them did report evidence of advanced achievement among the balloons. Linguistic, aesthetic, intellectual—''

''Gasbags!'' The girl had flinched, but Norlund let his scornful voice run on. ''Down at the university, I took a course in Medean biology. We spent a week on a lab ship to study the balloons. Half-plants. They hatch out of floating weed in the tropical ocean. Inflate themselves with hydrogen when they mature. Drift on the wind or pump themselves along with their siphons. Living on insects or swamp-vermin or anchored by their drag-ropes over any sort of garbage. About as brainy as plastic market-bags!''

''Some, perhaps.'' The girl showed no resentment, but her warm fervor surprised him. ''Not all. We've been here five years now, looking for brainy balloons, if you want to call them that. Digging through official records. Touring the tropics. Searching the tapes in the university archives. Turning up clues wherever we could. We believe they do exist.''

The color of emotion became her.

''There were—are—hundreds of different species of the balloons and the things they call fuxes. Evolved to fit the enormous range of habitats between the hot pole and the cold pole. Most pretty primitive. Many, as you say, degenerate now. Some already extinct. But at least a few were highly advanced, even with little or no material technology.''

She gestured toward the power stations under the falls and the blue-glowing hydroponic circles and the red-lit thermal roofs of Chong as if her aloof disdain could sweep them all away.

''We're looking for contact with a species never well-known. The Ahya—the kind you call fire balloons. A great part of their cycle of life is what you have just outlined. Individuals bud from a plant-like matrix floating in the tropic seas. They inflate, fly, feed and grow, breed, shower milt back into the sea. The difference we know is their way of death.''

''On Farside?''

The words reflected more mockery than he had meant to show, and he saw her flush of resentment.

''Individuals past the sexual phase leave their swarms.'' Her voice became coolly impersonal, her emotion well controlled. ''They work their way to upper latitudes and catch a jet stream that carries them across the Ring Ocean and on over Farside.''

''To the famous Banda Basin?''

''We hope to follow them there.''

''A hazardous hope.'' More careful now, he tried not to smile at her innocent intensity. ''The Basin's a fine place, I guess, for old firebags to die. But not much good for anything else. Certainly not for people. The carbon dioxide doesn't actually freeze out of the air till you reach the great ranges beyond it, closer to the cold pole, but the Basin's cold enough.''

''We know the difficulties.'' She nodded serenely. ''Grateful for them, in fact. They're why the sacred places have never been disturbed. Your scoffing doesn't surprise us, because the Ahya have learned to stay out of the way, but we've uncovered evidence to show that they had a high culture once. We hope to find it still surviving there in the Basin. Our last chance for a real contact before it is destroyed.''

Leaning toward him, wide-eyed and breathless, full lips quivering with feeling, she triggered a painful pang of desire. Three women had left him. The passionate redhead who tried to baptize him. The witty little artist from the hotlands who found she couldn't stand the Northcape cold. The lithe-limbed dancer who loved it so much she gave him up for a ski instructor.

Leda Lovato's urgent nearness chilled him now with a sudden bitter loneliness. He wished for a moment that he could somehow pick her up, but he had resolved not to let himself be hurt again. The High Cascades and the Farside fringes had always offered him deeper mysteries and more enduring beauties than any woman owned, and they had never betrayed him. Quickly, almost guiltily, he looked away from Leda to Padhai's red-scarred austerity. No doubt she belonged to him.

''The Ahya did try to welcome the first explorers,'' her quick voice ran on. ''The incident is mentioned in the first reports that got back to Earth, a hundred years before we left. They approached several landing parties, trying to communicate through varied channels. Modulated sound, from their siphons. Modulated light—they're luminous, remember. Even modulated radio frequencies.

''But they showed no material technology, no visible weapons or tools, nothing to interest those machine-minded Earthmen—except, of course, their radio signals. A few of them were killed and dissected in unsuccessful efforts to find out how those were generated—one tape in the archives compares the creatures to Terran electric eels.

''They soon got enough. They've avoided us since then, and we've almost forgotten them. We just weren't concerned about the possibilities of the non-material. We were looking for the sort of thing you have here.'' She waved at the window as if to obliterate the silver cones of Chong and the mirror-domed turbines beneath the red-lit wonder of the falls. ''Tools to conquer nature, not the wisdom to merge into it.''

''Listen!'' Norlund was on his feet, stung by her scorn. ''Let me tell you what we have.''

Almost mockingly, she shrugged.

''First, you must understand the tides.'' He slowed himself carefully, trying to reach her with reason. ''Though Medea keeps the Hotside always toward Argo, its axis is a little tipped, so that Argo oscillates north and south in the sky. Only six degrees, but it's a massive object. The tidal forces are enormous.''

''So?'' Padhai frowned. ''I hadn't noticed.''

''In the tropics, you wouldn't. It's the polar coasts that feel the heavy tides. A lot depends on the shape of the land. In the funnel-shaped Zaret inlet east of Northcape, there's a tidal bore that rises five kilometers every

Medean day. It pumps over into the Mushanga Sea—which is actually a great tidal lake.''

''Interesting.'' Without interest, Padhai flung out his dark-robed arm in an impatient gesture that sent a wave of his puzzling camphor scent across the desk. ''But what have Medean tides to do with us?''

''Plenty.'' Norlund grinned. ''Without them, you wouldn't be here now. Certainly you couldn't hope to reach the Banda Basin. We've drilled tunnels under the falls to tap the Mushanga Sea for hydroelectric power. The life of Northcape. It heats this room. It drives our industries. It grows our hydroponic food.''

He turned back to the girl, more hopeful that she would understand.

''Before we came, there was only patchy tundra here. The cape was too cold for the fuxes or the balloons or the early colonists. With tidal power, we've made an ecological niche for humanity on Medea. A clean new place, all our own—at least until a few smart fuxes began sneaking in.''

''Thank you, Mr. Norlund.'' Her tone was only slightly warmer. ''You help me see why the early colonists were so quick to forget their great original mission. Fighting for sheer physical survival, I suppose they had no energy left for anything else.''

''I'm no mystic.'' He tried again to explain himself, to earn her sympathy. ''I do understand physical energy—the power of these tides, of Argo's heat, of the solar flares. I can see life as a manifestation of energy flow. I have a feeling for the High Cascades.'' He waved at their red splendor, beyond the window. ''The same sort of feeling, I would guess, that you must have for God. The turbine complex under the falls is almost a temple for me. A place of great and beautiful machines that obey known laws and run for human good.'' He grinned at her mute protest. ''What I don't understand is the universal truth you say you hope to discover by watching a few dying firebags fall out of the sky.''

''Perhaps you'll learn,'' she said, ''when we come to the Banda Basin.''

''I haven't agreed to go.''

''Mr. Sakuma said you might be difficult.'' She smiled serenely. ''I told him we have a way to persuade you.''

2.

They left the docks of Chong on a bright spring Sunday to ride the ebbing tide down Black Canyon to the sea. With the double sun just clearing the looming eastern cliffs the High Cascades had been carving through geologic ages, the wind was brisk and raw.

Norlund stood among his five companions beside the three antiquated ice-crawlers chained and chocked to the deck of the small coast survey ship. Padhai and Leda Lovato, still awkward and uneasy in their stiff new thermal gear. And the three hard men he had found at last to join them, tough veterans of the Northcape frontiers with skill and nerve enough to risk the Farside trip.

Nannuk, the moon-faced nuke engineer, who kept insisting cheerily that the Banda Basin could be no worse than the tundras and the polar seas his Inupik forefathers had known back on the motherworld. Floreal, the wiry glacier guide who loved the ice and claimed to hate it, always saving his pay to buy a safe little Northcape bar but always squandering or giving his savings away and signing on for one more final trip. York, the lean, black-bearded geologist, a silent but explosive man, driven by unresting inner urges that made him question everything, kept him tossing pebbles at the sky for target practice or trying to beat the master chess program in his pocket computer.

Norlund felt lifted by a brief elation. After months of effort and tension, they were really on the way. Though the tensions waiting ahead would surely be more severe and the efforts far more desperate, they would be going where men had never been. He didn't expect the dying firebags to unite them with any mystic galactic supermind, but he was suddenly looking forward with an eagerness that surprised him to all the challenges of reaching the Banda Basin and surviving there.

Chong was built on a river bend, safely above the highest tides. The water along the docks was shallow and slack, but soon they were on the deep current that rushed down from the falls. The silver roofs whirled away. Looking beyond them at the endless walls of tidal water thundering down into yellow mist, he wondered a little wistfully if he would ever see Northcape again.

''Magnificent!'' Leda stood close beside him, warmly friendly since things were going her way. ''Nothing back on Earth is half so wonderful. I see why you love it.''

In the early skirmishes with her and Padhai, he had suffered several stinging defeats and earned a single little victory. The first surrender had been his agreement to go, his hard resolution crumpling before her shrewd appeal. In the Medeana archives, she had found an early orbital survey that reported indications of radioactive deposits on the high plateau that sloped up beyond the glaciers to the worn mountain ridge that rimmed the Basin. When he refused to be impressed, she went back to Sakuma.

''Our tidal power is plentiful but stationary,'' Sakuma reminded him. ''We still depend on nukes for ships and aircraft. If there really is uranium or thorium on that plateau, we need it. I know the climate up there is pretty grim, but men like you can find ways to get it out.''

''I don't like bringing your machine technology any closer to the Ahya,'' Leda admitted when at last he gave up. ''But if the ore is really there, you'd find it in spite of us. When we reach the Ahya, we'll try to warn them. To protect them as far as we can.''

''When?'' He was grinning, amused at the will beneath her wide-eyed charm. ''Better say if!''

The next setback came when he wanted to leave her behind.

''We'll be out there alone a good many months,'' he cautioned Padhai. ''If, in fact, we do get back. A long way from any authority and under conditions that can test civilized behavior. We can't take a woman—''

''Lovato has to come.''

''Not with us. She's too young. Too—well, appealing. I'm afraid of what might happen. Though I'm looking for decent men, they'll be vigorous and normal—and armed. You yourself could be in danger, sir.''

''I?'' Padhai's droop-lidded stare held icy indignation. ''You assume too much. Lovato and I are not lovers.'' After a moment he added, not so sternly: ''It's true we might have been, but we have sacrificed the physical—at least until our work is done.''

The man was insane, Norlund thought. And most unfair to Leda.

''She's the linguist,'' he was explaining. ''She has studied all the old records of contacts with the Ahya and all the known languages of their more primitive cousins. She has spent months on a chartered ship, tracing their migrations by radar and recording their own radio signals. Now she has programmed everything useful into a very expensive computer-translator. I couldn't run it. When we reach the sacred places, she will be the vital link to the higher mind we seek.''

They had beaten him once more, when he wanted to make at least most of the trip by air.

''We can fly to the Basin rim,'' he suggested. ''Or anyhow to the lower plateau, beyond the glaciers. Saving months of time and a good deal of danger—''

''Danger? The danger is that we might alarm the Ahya.'' Hoarsely violent, Padhai cut him off. ''We'll take no aircraft. Nothing fast or powerful. We go by sea to the glacier foot. Then by surface crawler.''

''Which may be safer for us, after all.'' Leda gave him a quick, apologetic smile. ''We've uncovered evidence enough that the Ahya don't like machinery near the Basin. There are reliable reports that they have exploded themselves against aircraft that got too near.''

His one small victory came when they tried to disarm the expedition.

''The Ahya fear weapons,'' Padhai announced. ''With cause enough. We'll carry none.''

''You don't know Medea,'' Norlund told him.

''We've been five years here.''

''In the hotland colonies. They're pretty well defended. Even here in Chong, life seems safe enough. But there are human renegades and native predators—''

''Down on Hotside.'' Padhai scowled through his scar. ''I believe the Banda Basin is too cold for most sorts of life.''

"Could be." Norlund shrugged. "But we wear guns." He nodded at the holster that hung with his flaremask beside the office door. "I don't think you'll find anybody to take you to the Basin without his own weapons."

"You're afraid?" Leda's dark eyes narrowed at his hanging gun. "Afraid of the Ahya?"

"I don't know the Ahya." He ignored her cutting tone. "I do know Medea. The effort to run an Earth-style socialism down in the hotlands has never worked well. Free spirits keep cutting out, and some go wild. I wear a gun."

A bend in the canyon had hidden the splendor of the High Cascades before they met the foaming crest of the tide. Riding that rush of wild water down to the sea was an adventure in navigation that Norlund always enjoyed, but Padhai showed no zest for adventure.

"Come along." Curtly, the tall mystic turned his back on whirling currents and spray-drenched rocks and racing cliffs. "We've plans to make."

Down in his cabin, that persistent camphor reek was strong. Among the charts where he wanted to lay out their route to the glacier coast and over the ice and across the highlands to the Banda Basin, Norlund saw an odd little soot-blackened lamp and learned the secret of his odor. He burned tiny sticks of a precious wood he called camphor laurel, brought all the way from Earth.

"For meditation." Impatiently, he pushed the lamp aside. "A sacred incense. It nourishes the spirit."

When Norlund got back to the deck, they were out of the estuary. The suns had set, and the tall cliffs of Northcape were only a faint red line in Argo's glow. That night the captain caught the vast tidal eddy in the Ring Ocean that swept them south till that huge sullen dark-streaked disk was visibly higher, east through oily seas choked with vinegar-scented crimson weed, north again toward the Farside coast and on into the latitude of storms.

A late polar front struck them there. For three long Medean days—each a three-day week of human time—the savage weather kept them all below the deck. Norlund was afraid the crawlers might be lost, but when the storm was over he found them safe, frozen beneath half a meter of ice.

They steered out of the tidal eddy.

"A tricky thing," the captain told him. "It's an ugly coast, even here below the glacier bays, but we have to keep near enough to steer into the Chikamatsu fjord. Miss that, and we're caught in the Zaret bore. Whatever floats, you'll find in the Mushanga sea, coming back across the falls."

Neatly, the old seaman brought it off. Catching the crest of a rising, weed-clotted flood, he steered them close to an ice-capped granite headland and into the fjord. The climbing tide carried them up its ice-carved channel and through the white-streaked narrows into a long calm lake where tall ice-masses drifted in deep water green with rock flour.

"A glacial lake," the captain said. "As far as we can go." He dropped his voice, for Norlund alone. "You understand that we're to wait here only through the summer—we'll be making a coastal survey. We'll have to leave before the first winter freeze-up. If you aren't back by then—I'm afraid you'll never be."

He moored against a jutting rock where they could hoist the crawlers ashore. Heavy steel-tracked machines, they were the model designed a hundred years ago by the first Northcape explorers. With loving skill, Nannuk had rebuilt these three from the best parts of a dozen he had found rusting in junkyards.

Climbing from that hazardous landing to the glacier, they followed a U-shaped valley the ice had cut in some wetter age, grinding over rockslides and wallowing through bogs still stiff with winter ice. Norlund and Floreal led the way at first, with Padhai and Leda in the second machine, the geologist and the nuke mechanic behind. The Seekers stalled their crawler in the first ice-bog, however, and Padhai refused to try to drive again when he learned that its power was nuclear. Floreal took the wheel, and Leda elected to ride with Norlund.

"I guess you think we're pretty stupid?" She looked sharply at him. "Hating the machines we must use."

He shrugged. "Anyhow, I'm glad to have you with me."

Here on the lower glacier, still below the retreating snowline, driving was difficult, even with the three machines tied together against the dangers of cliffs and crevasses. They lurched and skidded over slick ice hummocks, splashed across torrents of meltwater, pitched and crunched through exposed boulder-beds. Yet, with only half his mind left for Leda, he enjoyed her childish delight in each new vista and her excited sense that they were attempting an ultimate adventure. Aware of his task, she kept silent through the times of stress. When smoother ice let him relax, she began with a candor that surprised him to talk about herself.

Her great-grandfather had been a *brujo* in a mountainous land called Chihuahua, a man of primitive wisdom in an age too late. When starvation came, his son had walked north across the deserts to a richer land where he became a poor farm worker. Her father had been a miner, her mother a follower of movements, of this great new cause and that, always meeting and writing and speaking, with no time to make a home. She herself had been a college student at a place called Tulsa when she first met Dr. Aum.

A poor student, she said, confused about the meaning of life and uncertain what she wanted from it. After a sad love affair that left her still a virgin, she had tried to kill herself. Her roommate, a girl in the college Seeker Society, had stopped the blood and saved her life, had taken her to hear Dr. Aum when he came to lecture on the campus. When she learned about the future he promised, the mystic union with a universal mind, everything had changed.

After the lecture, she nerved herself to speak to him. He smiled and encouraged her. With meaning now in her life, she had earned Seeker scholarships and fellowships to study linguistics and computer science. She graduated into a research position in the Seeker Society, with the right to wear its symbol. And, finally, Dr. Aum had chosen her to come with him to Medea.

''A great man!'' An awed devotion trembled in her voice. ''Truly great. His goal is the noblest thing a man could dream of. If he does succeed—and I know he will—he'll be recognized as the greatest member of our race.''

''You love him, don't you?''

''Love?'' The word seemed to startle her. ''We are united.'' Looking sharply at him, she added with a child's directness: ''We've never had sex. Later, I hope. Now, he says, it might risk our mission.'' Her grave eyes studied him. ''Perhaps you think we're foolish?''

Glad for a reason not to answer, he gripped the wheel and swung the crawler to avoid a half-concealed crevasse. Though he didn't want to get involved again, Leda had begun to haunt his imagination. If she hadn't been a Seeker—

She went back to Padhai's crawler when a late spring blizzard stopped them, so blinding that they dared not move. It howled through a long Medean day. Sealed and heated against it, the crawler was secure enough, but he found himself dreaming too often of her, and he had to apologize for his abruptness with Floreal for his crude speculations about her relationship with Padhai.

When the wind died, they dug out of the drifts. Floreal went back to drive Padhai and Leda came back to him, and they crept cautiously on. It was Darkday, the hazards hard to see, but the iceworld shone with an eerie loveliness. Half below the snow horizon, Argo was a dull crimson dome, three moons in line above it. Brighter than Argo, a nearly steady green aurora draped the northward sky, twin great white stars burning through it—the major suns of Castor.

''Beautiful!'' Leda whispered. ''I'm glad to see it. Even if we never reach the Ahya, I'm glad we came.''

When they reached open ice beyond the new snow, where driving was easier, she began asking Norlund about his own life. Though her innocent directness startled him at first, he felt delighted and found himself speaking freely about the artist and the dancer and the red-haired coed who had tried to baptize him.

''Olaf, you've led a troubled life.'' Her voice held a warmer sympathy than he thought he had earned. ''I think you have lived too much for yourself. If you had followed some great cause, like Dr. Aum's, you would be happier.''

''You sound like that redhead.'' He had grinned for a moment, but her intent concern turned him serious again. ''I must follow what I believe. I doubt all miracles—including whatever wonders you expect from those dying firebags. But I do believe in mankind and a future for men here on Medea. When I can do something for Northcape, something to enlarge and secure our new niche here, I'm following the greatest cause I know.''

''You'll change.'' Eyes violet again in that strange light, she smiled at him solemnly. ''When you meet the Ahya.''

''Perhaps.'' At such a moment, he couldn't quarrel with her. ''Perhaps I will.''

Week by week, they climbed the ice. Darkday, Dimday, Sunday. Darkday, Dimday, Sunday. The frigid air grew thinner until they had to pressurize the crawlers. One Darkday, when they had stopped for rest, Padhai found the first balloons. Elated, he passed his binoculars to Leda and then to Norlund.

The motionless air was savagely cold. Though the suns had set, Helle was flaring, its hidden fire blazing strangely on a banner of noctilucent cloud. He found the balloons above the cloud, high sunlit points clustered into a drifting globe.

''Show no lights.'' Though the balloons must have been a hundred kilometers away, Padhai hushed his raspy voice. ''Use no radio or radar. We must not alarm them.''

''We won't alarm them.'' York was reaching for the binoculars, tension crackling in his voice. ''Not till we get closer.''

The next Dimday, when they had crept off the last thin fringes of the ice and toiled up a long escarpment to reach the high plateau, where the thin and bitter winds were so dry that no snow fell, that tension became explosive. York had come to prospect for radioactives, but Padhai wanted no delay.

Norlund arranged an uneasy compromise. York could sleep in the rear crawler while Nannuk drove. He could detach the machine, while the others made their rest camps, for short side trips to read his detectors and take his samples. Padhai kept fretting that he might frighten the Ahya, but he found rich ore.

''This old monocline is rotten with radioactives,'' he reported to Norlund. ''Pitchblende, carnotite, thorite!'' He dropped his voice, squinting through his beard at Padhai's crawler. ''Our problem now is to get back to Northcape with the news before the old fux kills us all.''

3.

They set up the station on a boulder-scattered beach at the lip of the Banda Basin. Here, Argo never rose, though on a Darkday it lit the southwestern sky with a dim crimson false dawn. Even on a Sunday, the sky was always clear and violet-black, the air calm but cruelly cold. Working outside the crawlers, they needed powerpacks to warm the thermal suits and feed fresh oxygen into their masks.

For concealment, Padhai tried to arrange the crawlers and the pressure tents to blend among the boulders. To York, at least, his caution seemed excessive. When they were unfolding the big radio dish to pick up signals for Leda's computer, the geologist asked permission to use it to report their discoveries to the home office. Curtly, Padhai refused.

"Dr. Aum is working under a terrible strain." Leda tried to excuse him. "The Ahya have reason enough to be shy. If we frighten them away, that could spoil everything."

As shown on the orbital maps, the Basin was a long shallow oval three hundred kilometers across. The slope from the station was gradual and the floor looked flat as far as they could see, bare rock and gravel sifted here and there with frost.

"Carbon dioxide." York pointed across the Basin to a far line of jagged peaks that stabbed the black horizon, pink in the pale cold sunlight. "Frozen from the air, when you get high enough." He turned to Leda, as if hoping to interest her. "You see, Medea is a little egg-shaped. Deformed by Argo's gravity. The Farside cold pole is high. Beyond the limit for any sort of life."

"We aren't going any higher."

She turned quickly back to Padhai, who was searching for balloons. By daylight, even with binoculars, they were hard to see. Excited when she picked up the first settling swarm, she showed them to Norlund. A tiny wheel of sunlit motes, spinning very slowly against the purple darkness.

"At first," she said, "we'll just listen. Observe whatever we can. Try to bridge the gaps in the translator program. If we get too eager, we could spoil our chance."

Seen through the quarter-meter telescope after the double sunset, the balloons were tiny globes swimming in velvet blackness, rosy and golden, changing hue in unison, flowing through patterned movements that seemed strangely precise and clearly purposeful. Watching them, Norlund began to feel a troubled awe. For the first time, his imagination opened to an oddly frightening possibility that the firebags had come here to do something more than just to die.

Suddenly curious, he asked permission to drive his crawler a few kilometers down the Basin slope to look for dead balloons. Padhai refused, until Leda intervened. All their efforts spent on some kind of intellectual or spiritual contact, they seemed to care little about the anatomy of the Ahya, nothing about their physical processes.

"Go on," Padhai muttered at last. "But not beyond ten kilometers. Drive slow. Use minimum power. Keep radio silence. Show no lights."

York volunteered to go along, for whatever geological studies he could make in the dark. Men on Medea had always been advised against too much washing, lest the normal human body flora be replaced with Medean parasites, but it seemed to Norlund that the hairy geologist overdid that avoidance. In the heated crawler, he stank.

Nine kilometers down the slope, almost on the Basin floor, they picked up what was left of half a dozen firebags. Collapsed parchment sacs, dry and tiny, frozen brittle. A few fragments had an odd bright surface sheen, like polished aluminum. Nothing about them told him how the Ahya could move so well against the wind, or thrive in this killing cold, or emit radio signals. When he brought them back, Leda didn't even want to see them.

''The old explorers made studies enough of dead balloons,'' she told him. ''In their own crude way, they learned everything that doesn't matter. They concluded that all the balloon species depend chiefly on ultraviolet energy from the solar flares to generate their lifting hydrogen—which they can oxidize again, for their vital energy. I think they start the long flight here with all the flesh and water they can carry. Along the way, the flares keep them fed. I don't care about the chemistry. What does matter is the fact that they do get here with life enough left for the grand dance we have come to study.''

That study took too long for York.

''Look at the fix we're in!'' Afraid of Padhai, he fumed to Norlund. ''Food supplies wouldn't carry us through the winter—not all of us, anyhow—and Nannuk isn't certain how long he can keep these old nukes going. We've got to get back to the ship before the freeze-up. Which could be a problem, even now. With the lower glaciers thawing, the valleys we followed could be rivers. It's time to get out.''

''Padhai's hard to hurry, and it's his trip.''

''Not for long.'' York scowled through his mask. ''Not for very long.''

Padhai and Leda seemed, in fact, to be wasting no time. Desperately busy, they were taking turns day and night at their listening post and the computer. Norlund offered to help, but Padhai curtly turned him down.

''We're trying to learn a language,'' Leda explained. ''The linguistic studies the first explorers made are too fragmentary to be very useful. Of course there's been no recent contact. Most of what we have to go on is the known dialects of the related species—generally very distantly related. There are similarities that seem to show some contact with the Ahya, but still we have to depend pretty much on linguistic intuition. And, of course, the computer-translator.'' She gave him a quizzical smile. ''One machine I do understand!''

For the others, time dragged painfully. Nannuk serviced the nukes and repaired damaged crawler tracks. Floreal got himself gloriously drunk before Padhai discovered and wrecked the still he had set up in the kitchen tent. York kept begging for leave to borrow one crawler for a better survey of the plateau behind them, until Padhai's blunt refusals drove him almost to explosion. He stumbled away, quivering with anger, slapping the bulge on his chest where the thermal fabric covered his gun.

''The arrogant idiot!'' he muttered to Norlund. ''Thinks he's some sort of god!''

Leda had left her computer to follow anxiously.

''Be patient, please!'' she begged him. ''The Ahya are shy. We don't dare scare them. Please understand.''

''I could understand you.'' He must have leered through his goggles, because Norlund saw her flush. ''But I've had too much of him.''

Norlund tried hard to keep the peace, but as the short summer waned himself grew uneasy. By his own calculations, it was already too late to be really certain they could get back across the ice in time to catch the ship.

''I know we're all in danger,'' Leda admitted when he spoke to her about it. ''I've told Dr. Aum—but I have to agree with him that our goal is worth any risk.'' Her soft voice sank appealingly. ''It's our last chance, Olaf. This trip has cost a lot. If anything goes wrong, we won't have funds to try again. With something so tremendous in our very reach, we can't give up. Mankind might never have another chance.''

Suddenly, York's grumbling stopped. Norlund noticed him spending a good deal of time alone with Floreal in the cook tent or with Nannuk in the shop tent. They both denied even thinking of anything disloyal when he spoke to them, but he warned them carefully that the return journey would be very hazardous for a single crawler, or even for two. All three were needed, tied together, to get safely back across the glacier.

''Don't you fret.'' Nannuk's broad face held no expression. ''We'll get home safe.''

Padhai announced later that day that he and Lovato were ready at last to attempt contact. His angular, scar-slashed face was as hard to read as Nannuk's had been. Norlund couldn't guess whether his decision had come from hope or panic desperation.

The computer-translator and the communication gear were loaded on two crawlers for the descent to the sacred ground. Norlund and York came to drive them, leaving Floreal and the nuke mechanic to keep the station and make ready for the dash back across the ice.

They set out on a Dimday. With summer fading, the double sun was already low, but Helle was flaring again, three times brighter than its red dwarf twin. Goggled against its ultraviolet, Leda looked remote from him, oddly elfish, somehow almost sinister.

Yet he felt happy to be with her once more. The driving was easy, down the slopes that ancient glaciers had scoured and out across the frost-dusted flats. He tried to talk, hoping to recover the trust she had shown before, but he found her friendly candor gone.

''Sorry, Olaf.'' She gave him a brief and absent smile. ''But this is the crisis. Certainly for Dr. Aum and me. The climax of our lives. I guess that doesn't matter a lot to you, but we believe this is a turning point for all humanity—the moment when our race may achieve its destiny through a union with the universal mind, or may fall back to die unknown. I'm sorry not to talk, but I've too much to think about."

Beside him in the pilot dome—smelling remarkably better than York—she watched the dimming sky and a chart she had made, guiding him a hundred kilometers out across the Basin floor to a rust-colored stretch of ice-smoothed sandstone that she said was the sacred place.

The balloons were high and scattered when they arrived, still feeding on the flare, she said. With the crawlers parked side by side, she set up her computer console in the space between them, wired to antennas and telescopes and directional mikes and reflector lamps and batteries of speakers mounted in bristling hardware thickets on the crawlers themselves.

Before all that was ready, the flaring sun had set, leaving the Basin faintly lit by the far white companion suns and the stabbing javelins of a crimson aurora. In that eerie dusk, the balloons began drifting back into a compact swarm high overhead. Norlund gave up his effort to count them—there were many hundreds, perhaps thousands.

Luminous, they were star-like points until Leda let him use the telescope. He saw them then as bright little globes trailing rope-like limbs, glowing with shifting shades of gold and rose and green. Sinking slowly lower, they began to space themselves into lines and wheels and vaster spheres, the changing colors flowing from one to one and group to group in a quickening harmony. Suddenly he could hear them, the sound of their siphons picked up by the mikes and amplified through the speakers on the crawlers.

They were singing!

Oddly, their blended song reminded him of a children's choir he had heard in the hotlands long ago when that religious redhead had enticed him into her church. There were countless voices, clear and high and pure, all in unison. The cadences and rhythms were utterly strange, eerily pleasing but somehow disturbing.

Leda snapped the speakers off, but still he could hear faint strains of the song. Soon, as the swarm kept descending, he could make out the globes without the telescope. The patterned clusters began merging into ever-larger clusters, wheeling, tilting, interweaving through intricate aerial dances that followed the rhythms of their song.

Standing a little aside, staring at them through his bulging ruby goggles, Padhai began waving his binoculars in time, as if he had become a conductor of that uncanny symphony. His rasping breath was shallow and fast, almost, Norlund thought, as if he were nearing a sexual climax.

Leda, headphones over her hood, was bent intently over her computer console. Translating and recording the song, Norlund supposed. Perhaps analyzing the radio signals or other elements of which he was not even aware.

"Something new, Dr. Aum!" She was breathless with a triumphant excitement. "Something from outside. I can't quite read it yet, but the collective mind of the Ahya must be in touch—oh, no!"

Suddenly, that song had been cut off. The balloons all went abruptly dark. When their light came back, it was a ghostly blue. For another endless instant, they hung frozen. Then, all together, they darted upward, spreading apart as they fled into the dark.

"What's wrong?" Padhai was hoarsely accusing. "What frightened them?"

"Our machines, I'm afraid," Leda said. "We brought too many machines."

Scattering, the Ahya vanished like a puff of pale blue smoke. Except for the flying shafts of the red aurora and the twin diamond points of the far companion suns, the midnight sky was empty. A sudden wind blew out of the northeast, soundless but bitter, chilled air pouring down from the zone where carbon dioxide froze.

"So they're gone!" York's gritty voice held a savage satisfaction. "Now we can get out!"

4.

Leda was already calling after the scattered balloons. Pink in the glow of a heater coil, her bare fingers danced across the console. Her voice rang into the mike, anxious, tight, and high. The beacon lights on the crawlers began to burn with turning color, beaming her call into the hushed Medean midnight. The banked speakers crackled and hummed, and suddenly bellowed their Ahyan song—a sound that gave Norlund gooseflesh.

York strode to face Padhai.

"Haven't we had enough?" he muttered. "Can't we quit this nonsense? While we have a chance to get out alive?"

The gaunt mystic brushed him silently aside and strode toward the translator, calling something to Leda.

"Damn you, listen!" York's shaking hand swept toward the bulge of his gun. "We've played your fuxy game too long. My own report on the ores in that plateau is worth a billion of your firebags. I demand—"

"Control this man," Padhai rapped at Norlund. "We've no time for him."

"Cool it, can't you?" He caught York's arm. "I know we should be starting back. But it's still Padhai's party. If he wins his gamble, it could be the biggest thing that ever happened on Medea. We've got to give him at least another day or two."

York stood speechless for a moment, panting with anger.

"Tomorrow's Darkday." With a stiff little nod, he squinted after Padhai through his frost-rimed beard. "I'll give him Darkday. But that will be all. When the suns come up, we're rolling the crawlers—with the rutty old fux or without him.''

He slammed into the crawler he had driven, but Norlund stayed outside to watch. Leda was still beaming her multiplex appeal into the sky, but for a long time all he could see was the stars and the fluttering aurora and the false dawn of hidden Argo, a faint red glow beyond the southwest Basin rim.

At last, however, through Leda's binoculars, he saw the Ahya returning. They came back cautiously alone, or in skittering little groups, their colors unsteady and pale. Gathering into a larger cluster at the dark zenith, still too high to be seen without aid, they hung uncertainly there.

Padhai conferred with Leda, their voices quick and brittle, and she fingered the console again. He saw a change in the rhythmic shift of color in the beacons on the crawlers, heard a change in the cadence of that brain-probing song, saw the big radio dish swing to sweep the swarm.

The balloons replied!

Though they were still far too high for him to hear whatever they sang, he saw them brighten and then begin to wax and wane in unison. Breathlessly intent, Leda stopped the booming song of her translator. When she touched a button on the console, the massed voices of the Ahya trilled and quavered faintly from a little speaker there.

''Dr. Aum, they're waiting!'' Relief shook her voice. ''They're still offended by our intrusion into this last sanctum, but at least they're willing to let us try to explain.''

The explanation took a long time. Talking into the translator, Leda told her story of the Seekers and their search for a universal mind, almost in the words that Norlund remembered. Padhai took a turn, hollow-voiced and hoarse, shouting what Norlund thought must be his native Hindi. Much of the message, however, must have come from the memory banks of the computer itself, because the signals continued while the two Seekers stood silent, merely watching the sky.

The auroral curtains rippled, paler and brighter, redder and greener, reflecting Helle's recent flares. The hard bright twin points of Castor crept along their slow circle around the celestial pole. The northeast wind grew colder, soundless but deadly.

Chilled through in spite of his power pack, Norlund climbed into his crawler to heat a meal and brew smoking sealeaf tea for Leda and Padhai. When he came back with his tray, however, they had no time for it.

That first compact cluster had grown, as more scattered groups came back to join it. As it settled slowly back toward the sacred place, its member creatures began to shift positions in a strange and puzzling way.

Straight lines bent into whirling rings. Smaller rings meshed into the larger, to make a vast disk. It spun slowly, the balloons that formed it moving with a precision that looked almost mechanical. Bulging slowly, it became an enormous dish. A single balloon, glowing bright green, swam into place above it—and a stunned realization took his breath.

That oddly shifting flow had outlined the shape of a reflecting telescope, with the lone green individual at the point where its focus should be. He wanted Leda to confirm or deny his dazing intuition, but she and Padhai were still bent over the console, watching the flash and flow of symbols on its scope, listening to its little speaker, which still trilled the swift, mind-piercing music of the Ahya.

When he looked back into the sky, that outlined telescope was already coming apart, its glowing components separating into two new clusters, which swiftly formed two new telescopes, axes aimed at new points of the midnight sky.

Soon those two dissolved again, the bright balloons flowing again to make up something else. Sometimes there were three slowly spinning telescopes, sometimes one again. Often there were other shapes, whose function he dared not try to guess.

Once, for perhaps three minutes, there was a lofty form that caught his throat with the breath-stopping beauty of its shape and changing radiance. The bright spires pointing at the Castor twins made him think of the Terran cathedrals he had seen in films at Medeana, but most of it matched nothing in his imagination. After those few aching, dazing, endless minutes, it too flowed apart.

Groping for sense in what he saw, Norlund felt utterly perplexed and somewhat frightened. There was purpose visible in that slow celestial dance, but its goal lay beyond him. There was power in it—which might be benign, for all he knew, or might be unimaginable evil.

"They understand why we're here."

Leda had turned at last from the console. Shivering with cold, even in her powered suit, she accepted her container of tea with a grateful little smile.

"Now," she added, "they're considering a tougher question. What to do about us. A pretty complex issue. To put it in a way you ought to understand, they're deciding whether the human race has earned admission to universal civilization."

That staggered him, even though he had half begun to anticipate something of the sort. Shivering to apprehensions colder than the silent northeast wind, he stared again at that strangely blazing celestial quadrille. Looking back at Leda, he tried to get his breath.

"There was—there was a metal-looking film." He leaned toward her, trying to read some expression behind her dark goggles. "On some of the fragments of dead firebags I picked up. Inflated, they were spheres. A partial metallic lining would make a natural spheric mirror—or I suppose the inner membrane could be stretched to control the focus. When I saw them forming into something like a radio telescope—"

His breath failed again.

"True." She nodded, pausing to sip from the hot container. Though he couldn't see her features, she seemed curiously calm. "They do have a radio link."

A shock of dismay shattered his awe.

"If they have to call the stars about us, we can't wait for any answer. Except from the other suns in the Castor system, a reply would take years. Maybe hundreds or thousands of years. We've no time—"

"I believe the Ahya have a different sense of time." Her mask lifted toward that intricate dance in the sky. "It was hard for me to grasp at first, because the individual balloons live no longer than we do. But here, for a time, each one is merged into a united mind that is eternal—or can be eternal, if we human beings can manage not to kill it."

He glanced uneasily at the crawler where he supposed York was asleep. "How long will they need? To decide—whatever they are trying to decide?"

"We don't know yet. We've been trying to communicate a sense of urgency. Without saying that we're afraid of violence from our own kind—we don't want to prejudice the verdict. But we can't yet be sure of anything."

With a baffled shrug, she glanced at the console.

"Even after all we've done, translation is still very largely an unsolved problem. Maybe unsolvable. We and they have too little in common—when you come to think about it, the human beings here have known the Ahya for several centuries without even beginning to guess what they are."

"York is going to make trouble." He frowned at the crawler. "Unless Padhai is ready to start back Sunday. Floreal and Nannuk will support him. I can't hope to hold them any longer. The fact is, we're already dangerously late."

"We'll see what they say."

"We can't wait a hundred years for an interstellar signal."

"I don't think they'll ask us to." He did glimpse her face as she handed back the empty tea container, worn, strained, half afraid yet half exultant, that bright bead gleaming against her nostril. "It's true they send and receive interstellar radio signals. Their first link, probably, to the great galactic mind, but I don't think it's very important to them now. We don't know enough to set any limits to what they can do. They can help us—if they decide we're worth it."

She returned to the console, while Padhai came to gulp his tea and wolf a few mouthfuls from the heated tray. When she called, he thrust the tray at Norlund and darted back to her. They listened silently, conferred in breathless whispers, fed some new message into the computer.

Norlund watched a long time, growing slowly colder. That unending minuet continued in the sky, dazzling with all its implications but still bewildering. He understood nothing that came from the Ahya, nothing that

Leda sent back in reply. At last he climbed stiffly into his crawler, intending to watch from the pilot dome. Instead, warm again, he went to sleep.

He was never sure just what had aroused him, but he started suddenly awake, haunted by a dim sense of trouble. He had been dreaming that he was back on the glacier, buried with Leda at the bottom of a deep crevasse. He had thought he heard a blizzard howling above them, and it took him a moment to recognize the singing of the Ahya.

His neck was stiff and his dry mouth foul. Struggling upright in the seat, he rubbed his gummy eyes and stared at the Ahya swarming low outside the dome. Distended parchment bubbles, three or four meters in diameter, snaky limbs dangling, siphons pulsing as they sang. A few had patches of long coarse hair, but most were bald and glistening, flushed with their changing radiance.

Uncertain what to think, he stumbled outside. The bitter wind took his breath and blurred his eyes with tears. For a moment, fumbling clumsily to adjust his mask, he couldn't see anything. When he could breathe, he caught a sharp pungence, sweetish and strange, the odor of the Ahya.

Padhai was now at the console, a thin stick figure in his yellow thermal suit, waving his lean arms and shouting hoarse-throated Hindi into the mike. The beacons on the crawlers seemed to flash and change with the cadences of his speech, and the same rhythms echoed in the song that pealed from the speakers.

When he found Leda, she was standing behind him on the crawler hood, arms lifted toward a roseate globe that hovered above her. Face tilted, she was singing directly to it, her tones as strange as the response from its own throbbing siphon.

Its live ropes were reaching for her. One brushed her, flexed its tip to touch her arms and kiss her singing lips, slid its sleek coils around her. He was jarred with a momentary fear that it might carry her away. But that would be impossible, of course; its lift would not support a human being. Anyhow, she was not alarmed. Her own reaching hands found another probing rope, stroked it gently.

''Le–'' Fear had dried his throat, but he had to know what was happening. ''Leda?''

She heard him and paused in her song.

''We're okay, Olaf.'' She looked down for a moment, her mask half lifted, her face almost luminous in the glow of the sphere, that symbolic bead shining white. Her voice was tremulous with joy. ''They're accepting us! It's wonder–''

She had looked across from him to the other crawler, and he saw her suddenly frozen in unbelieving shock.

A gun crashed.

Padhai's last shout died into a gasp of pain.

The nerve-probing chorus of the Ahya was cut off. All their motion stopped. Their changing hues stood still. In that stunned and breathless hush, he heard the clang of a crawler door and the grating of a boot on frozen gravel.

The gun slammed again, twice.

Whirling, he saw York crouched outside the crawler, wearing only the boots and his filthy underwear, red eyes squinting through the black tangle of his hair and beard. He gripped the gun with both bare hands, still aiming at Padhai.

''Got the crazy fux!''

He spat, spittle crackling in the deadly cold.

His gun swung toward Norlund.

5.

Norlund was still in his exposure gear, his own gun slung under his arm but inside the heavy coverall—worn outside in this savage cold, it would have become too stiff to fire. With no time to reach it, he ducked back into the crawler.

York's bullet crashed against the open door and whined away into the dark. Backing away toward the driver's dome, he ripped at the closure, found the balanced mass of his own gun.

The bright metal frame of the doorway was outlined in the pale glow of the Ahya, a chill blue at first but slowly flowing into green. Pebbles grated. A shadow fell across the green. He caught York's unclean odor.

Their guns exploded together, deafening in the crawler. Something plucked at his pushed-up mask, but he was still alive. Trembling, head ringing, he snapped on the inside lights.

York lay limp in his dirty underwear, hairy face down, one bare fist still clutching the gun. Most of the back of his head was gone.

Outside, Padhai stood swaying beside the console, bleeding through his mask, gloved hands against his chest. Leda was darting to him. She threw her arms around him, trying to support his sagging weight. Before Norlund could reach them, the balloons came back to life.

Their colors turned scarlet. The sound of their siphons became a wailing threnody, the cadence strange and slow. They sank again, toward the stricken man. Their quick ropes wrapped him. A dozen in a cluster, they lifted him away from Leda.

He was still alive. Norlund saw his lean limbs moving, heard his choked and gasping voice. Standing beneath, spotted with his blood, Leda sang something after him—or tried to. Her quavering tones broke into a sob of agony. No reply came from the cluster, but another red-glowing balloon dropped to wind its ropes around her while its siphon breathed a soft response to her broken song.

Norlund stood watching, breathless and bewildered, knowing nothing else to do. After what seemed to him a long time, that last balloon let Leda go and soared away after the cluster that carried Padhai.

All the Ahya he could see had now begun to glow in slow unison again, brightening and darkening together, rose and pink and rose and scarlet, rose and pink and rose and scarlet. Their wailing faded as they climbed. Moving in a dazed and automatic way, Leda tried to pick up their voices on the directional mike, but all she got was silence. When Norlund joined her, hoping somehow to help, they found that one of York's shots had gone into the computer, riddling its banked microchips with fragments of the exploding bullet.

With the binoculars, finally with the telescope, they followed the clustered globes that climbed with Padhai higher and higher into the greenish unsteady aurora. Several times they thought they saw him moving, until suddenly the globes stopped their flow of color, glowing crimson. There was no further movement of the dark, stick-like frame until the living ropes unwound to let it fall.

The Ahya scattered, their radiance fading.

When Leda had finally lost the last of them in the telescope, he helped her back into the crawler. She was shivering, drained of energy. He brewed hot tea for her and warmed a meal. Not yet ready for food, she sipped a little of the tea. He offered to drive the crawler to search for Padhai.

''No.'' Her husky tones were slow and dead, beyond sobs or tears. ''Don't do that. He lies where he should. Where the Ahya die.''

He put her into her bunk and broke radio silence to call the station. When Nannuk answered, he reported briefly that Padhai and York were dead. The balloons were gone and the mission was over. Seeming relieved with the news, Nannuk and Floreal agreed to bring their crawler to join him.

He was ready when they arrived, with Leda's now-useless communication gear stripped off the crawlers and the pressure seal on his own repaired where York's glancing bullet had torn it. He had taped his report on the tragedy for the firm and the Northcape Council. York's body he left lying on the icy gravel, beside the ruined computer and whatever else he thought might slow down their race back across the ice.

''Try to forgive him,'' he urged Leda.

Even after she had slept and eaten, she still looked pale and drained, hopelessly despondent.

''For your own sake,'' he said. ''What he did does look absolutely evil. A crime against all humanity—if you and Padhai were really getting through to some higher intelligence. But he was afraid of the Ahya and afraid of Padhai. He must have panicked when he woke and found the creatures swarming all around us. Perhaps he thought they were attacking you. He didn't understand.''

''What does it matter?'' She shrugged, not looking at him, her voice tired and dull. ''Nothing matters now.''

Riding with him in the lead machine, while they climbed out of the Basin and crossed that bare plateau again, following a new route that looked more direct, she kept bleakly silent. When he tried to talk, she seemed not to hear.

''What will you do?'' He put the question more than once. ''Assuming we do get out alive?''

They were on the ice again, the three crawlers tied in line, before she tried to give him any answer.

''I don't know.'' She sat staring blankly at the white horizon. ''York killed more than Dr. Aum. I'm afraid he killed the human future. After what they saw of us there in the Basin, I don't think the Ahya will ever give us another chance.''

For a long time, as they lurched and slid and bumped across the glacier, she said no more.

''But I do owe a debt to Dr. Aum.'' She sighed and shook her head. ''I owe a report to the Seeker Society—but now there's really nothing to report.''

''I think there is,'' he said. ''What I saw convinced me that the Ahya have at least a radio link with intelligent life on the planets of other stars. That fact should excite any scientist.''

''Maybe you're convinced.'' She watched without interest while he pulled the crawler out of a skid toward a gaping cleft in the ice. ''But nobody else was there. All our solid evidence was in the computer. All we've learned since we arrived, about the language and the history of the Ahya. All they told us, there in the Basin. All the evidence that they really do belong to a great galactic culture. With the computer gone—''

Her voice faded into listless silence as the second crawler slid toward that ice-pit in the wake of the first. He needed all his skill to ease the slack out of the connecting cable without a jerk that might snap it.

''Of course I must go back to Earth,'' she went on when she saw that he could listen again. ''I'll tell the story, with whatever evidence I can put back together. Perhaps a few will believe. Perhaps the Society will find resources to mount another expedition.''

She sat silent while he towed the following machines up a narrow and hazardous ridge, away from the fissure.

''Little enough promise in that,'' she muttered when they were on level ice again. ''That would take a hundred years and more. By that time, your own descendants will be mining uranium and thorium on the plateau—maybe even in the sacred Basin. The Ahya will be gone. I don't know where, but I think they've had enough of us.''

She said no more.

Later, when they were crossing another stretch of smoother ice, he attacked her silence again, talking about his life in Northcape and his place in the engineering firm. She sat listening, with little show of interest.

Somewhat clumsily, because of her bitter apathy and all the gulfs he felt between them, he led up to his own urgent question:

"Leda, why don't you stay? You may think I'm crude to ask you now—so soon—but I'll never have another chance. Won't you—marry me?"

He heard the tiny catch of her breath. She turned in the seat and leaned to kiss him, very gently at first but suddenly more firmly, arms tight around him.

"I like you, Olaf," she whispered. "Very much. I think perhaps we could be lovers."

"So?" Eagerness shook his voice. "You will?"

For a long time she said no more. Trembling, her arms squeezed again and let him go. She drew back slowly, watching gravely while he coaxed the crawler up a glassy hummock.

"Of course I can't." Her voice was dull and flat. "I owe too much to Dr. Aum. I—I could love you, Olaf. But I'll have to take the first ship to Earth and try to carry on his work. If I failed him, I could never respect myself."

Afraid to trust his voice, he kept silent.

The next Darkday, they were overtaken by an early northeaster, an air mass off the highlands where carbon dioxide froze. The wind was too dry for snow, but it froze meltwater to cover the summer-softened ice with a treacherous glaze. In spite of it, they kept grinding doggedly on until the storm had died and an ice-fog blinded them.

He halted the caravan. They were all bone-weary from their nearly sleepless race against the winter, but he asked Nannuk and Floreal to his crawler for a meal. Leda helped him serve it. She seemed cheerless and absent, though he could see her efforts to be gracious. When the tired men were gone, she murmured an apology and went back to her own bunk.

Tired enough himself, Norlund felt too tense for sleep. He went back to the driver's dome and sat there, thinking stray and aimless thoughts of his own unsatisfied life, of York and Padhai and the Ahya, of radio telescopes and universal intelligence, of immortality and the mortal remains behind them on the Basin floor, of Leda and himself.

The fog was shallow. It hid the ice, with all its chasms and glassy hazards, so that they dared not drive, but the Medean night was clear. He watched the dark-streaked ruby dome of Argo, still half below the horizon, floating on a pink sea of fog. He watched the green-bannered aurora and Castor's blazing major twins. Vaguely, he wondered what would happen to the Ahya when the uranium miners occupied their sacred places.

Drowsy at last, relaxed a little by the seeming peace and inhuman beauty of that deadly landscape, he got up to stretch himself and start back to his bunk. A muffled sound stopped him. The voice—of Padhai?

Shaken, he listened.

The murmur came again, from Leda's curtained bunk, just across the narrow passage from his own. It *was* Padhai's—but strangely changed, its strained hoarseness gone, its pitch a little higher, its intonations charged with the rhythms of the Ahya.

He stood there a moment on the deck, doubting his own senses, intending no violation of Leda's privacy but feeling too stunned to move. He heard her own hushed and sleepy murmur, surprised at first, then quickened with delight. He thought he heard Padhai again.

Shivering, as if the cold outside had somehow reached his heart, he turned silently back to the dome and waited a long time there, watching the fog rise and thicken to drown the dull dome of Argo in a cloud of blood, trying to believe he had somehow tricked himself, out of long fatigue and disappointed longing, with his own imagination.

He had dozed there, when something jolted him wide awake. The same changed voice, louder now but still indistinct. Speaking Hindi, perhaps. All he recognized was the name Lovato, trilled almost as if sung by an Ahya's siphon.

''Dr. Aum—must you go?'' Leda's voice, clearer now and louder, as if they were a little apart, protesting sleepily. ''So soon?''

''We must.''

''If you must.'' Her protest had faded into drowsy contentment. ''I'm so glad you could come back, Dr. Aum. I'm so very, very happy now.''

In spite of himself, Norlund had stepped to the end of the narrow passage between the bunks. He stood there breathless, quivering from a terror colder than the ice. In the faint glow from the dome, he thought he saw Leda's curtain flutter. Some tiny metal object clinked on the deck and rolled toward his feet.

That was all. Nothing moved the curtain again. There were no more voices. After a time he could hear Leda's soft and regular breathing. She was asleep. He caught his breath and bit his lip and shook himself, still trying to believe this was all his tired imagination. It was time for him to sleep.

He was starting toward his own bunk when his foot touched something that rolled and jingled softly on the deck. Bending, he saw a tiny gleam—and caught a scent that froze him. The strong camphor reek of Padhai's incense.

For a moment he couldn't move. Groggily, then, he picked up the gleaming thing and carried it back to the stronger light under the dome. It was Padhai's Seeker ring, the white little platinum globe mounted on a dull black ground. He sat a long time staring at it, until at last he shrugged and walked stiffly back to his bunk. Whatever all this meant, he had to get some sleep.

Leda woke him, calling cheerily through the curtain. A brisk south wind had swept away the fog. It was a brilliant Sunday morning, the twin suns rising over a diamond blaze of frost. Nannuk and Floreal had already come across from the other crawlers, and she had breakfast waiting.

The change in her astonished him. Her step had quickened. Color had come back to her drawn face and light to her hollowed eyes. In hopeful high spirits, she was chatting with the other men about the weather and their route when he joined them in the narrow forward compartment, and she met him with a smile that set his heart to hammering.

Sitting with him as they drove on, she seemed relaxed and happy, interested in everything. In the tilt of Medea's axis that caused the slight rise and fall of Argo in the south. In the flow of the glacier. In the art of driving on ice. Her dread of nuclear power somehow gone, she even volunteered to relieve him at the wheel if he could teach her a little more.

''I do forgive York.'' She broke a silence, suddenly. ''A pitiable man. I understand him now.''

Still bewildered by the change in her, he showed her the platinum ring.

''Oh!'' With that soft little cry of surprise and delight, she took it from his hand. ''It was lost.''

''It was dropped on the deck last night.'' The chill of his troubled midnight wonder shook his voice again. ''How—how did it get here?''

''Please don't ask.'' Eyes violet and grave, she looked hard at him. ''I'm afraid you wouldn't believe.'' She tried the ring on her middle finger. ''This was Dr. Aum's. I'm very glad to have it.''

He muttered uncomfortably, ''I don't know what to believe.''

''Perhaps you'll learn.'' Her face was enigmatic when he could glance at her again, perhaps a little sad. ''Though it won't be easy for you.''

Reluctantly, he gave up his questions.

As if awakened from a long nightmare, she said no more about York or the death of Dr. Aum. Instead, she began recalling little incidents from her childhood back on Earth and asking more about Northcape and Chong, surprising him with her assurance that they were going to win their race to the ship.

She asked to try the crawler's radio. Though interference from the aurora limited its sending range, the next Darkday she reached the ship. The glacial lake had begun to freeze, the captain told her, but the tides were still breaking up the ice. The last safe current was already gone, and he would have to catch the next weekly tide. She told him that would be too soon and persuaded him at last to wait one week longer.

They had to leave Nannuk's crawler on the glacier, when a broken cable let it slide into a deep crevasse. With Nannuk himself safely rescued, they came pitching and clanging down that last glacial valley on the last day of that last week, plowing through the winter-thickened ice-bogs and skidding over slopes glazed with frozen meltwater.

Forced away from the rock where they had moored, the survey ship lay out in a narrowed channel of open water. Abandoning the ice-caked crawlers, they scrambled across the floes to get aboard in time for the captain to catch the ebbing tide. It swept them down the ice-clotted fjord. Across the slack Zaret bore, they steered into the tidal eddy to ride it south and west along the Northcape coast, just ahead of winter.

Norlund and Leda spent those last fine autumn days on deck, basking in Argo's increasing heat, leaning on the rail to watch the bright-winged water creatures that kited away from the ship, staring like children in their renewed wonder at the red hydrogen plumes that arched above the double sunsets. Though their talk was carefully kept to inconsequential things, he thought he had never been so happy.

Too soon, however, they were riding another tide up the broad estuary of the Black Canyon River toward the city of Chong. Leda was delighted again with the awesome cliffs the High Cascades had carved, excited again with their first far glimpse of the falls themselves, but he had fallen into a dark depression.

''Olaf?''

They were standing at the rail, watching for the mirror cones of Chong. Her flare goggles were pushed up and her intense eyes studied him, nearly black and very grave.

''You mustn't be so sad. Not when I'm so very happy.''

He wanted to say that she would be gone too soon, that Earth was too far for her to return while he was still alive, but his throat hurt and he didn't trust his voice.

''I told you I was going home.'' Her low voice seemed to come from far away, and he wasn't sure he understood. ''Now I want to stay on Medea.''

''With—'' Her quick impulsive kiss took his breath and checked his unbelieving question. ''With me?''

''To wait.''

A crewman was busy coiling a cable near them. Her warm hand on his, she turned back to watch the High Cascades, a copper-tinted flood crashing down into blazing spray all around the north horizon. He thought she meant that she was going to wait for funds from the Seekers back on Earth to help her mount another effort to reach the mind of the Ahya, but that prospect was so dismal for her that he didn't try to put it into words. With the balloons frightened and scattered, their holy places desecrated, no new expedition could accomplish anything.

''This is hard for me to say.'' The crewman had gone on. Moving closer to him, she was still oddly hesitant. Her eyes, he saw, were bright with tears. ''Because I'm still afraid you won't believe.''

Waiting, he put his arm around her. He could feel her fast, uneven breathing.

''Dr. Aum is dead.'' He bent to catch her hushed and breathless whisper. ''His former body is. But he—we did reach the Ahya. Through them, we touched the cosmic union they have found. Long enough to change everything—though I didn't know it then. He was taken into their eternal being. I'm waiting now for a greater person than he was, coming to continue what he began.

"His child!"

A shudder swept him when he recalled that altered voice murmuring in the dark and that lingering reek of camphor and the platinum ring that had fallen from her bed.

"But more than just his son—or his daughter, perhaps." Stronger now, her voice had a momentary note of pleasant speculation. "A child of the Ahya, too. A child of the whole galaxy. Think of that!"

Not knowing what to think, he stood silent.

"Olaf, please believe!" Her quivering hand closed on his. "I wish I could tell you the sense I have of what it means—the certainty! Our child will grow up to be the link we came to search for. The bridge I thought we had lost, between mankind and the mind of the Ahya. He—or she—will lead us toward the noble goal the old astronauts were seeking when they first set out across space to Medea."

Dazed, he shook his head.

"I was afraid you couldn't believe." Anxiously, her wet eyes scanned him. "I knew you would want to know all about the mechanics of it, but the great mind we touched is at least a different sort of mechanism. Which doesn't mean that you would have to call it supernatural. It's older and greater than the galaxy, growing to fill the whole universe, with powers greater than we ever imagined—but just as natural as your turbines are. A more splendid element of nature!

"Now can't you believe?"

Shivering again, he drew her close against him.

"Leda—" He had to catch his breath. "I do believe."

His own eyes were blurred with tears, but he felt her slipping something on his finger, something gleaming brightly white. The ring that had been Padhai's, when he could see it, with the polished platinum sphere that stood for universal union.

FLARE TIME

Larry Niven

If the starship's arrival had done nothing else for Bronze Legs, this was enough: he was seeing the sky again.

For this past week the rammers had roamed through Touchdown City. The fifty-year-old colony was still small; everybody knew everybody. It was hard to get used to, this influx of oddly-accented strangers stumbling about with vacuous smiles and eyes wide with surprise and pleasure. Even the Medean humans were catching the habit. In his thirty-four earthyears of life Calvin "Bronze Legs" Miller had explored fifteen thousand square miles of the infinite variety that was Medea. Strange, that it took people from another world to make him look up.

Here was a pretty picture: sunset over the wild lands north of the colony. Peaks to the south were limned in bluish-white from the farmlands beyond, from the lamps that kept terrestrial plants growing. Everything else was red, infinite shades of red. To heatward a level horizon cut the great disk of Argo in half. You could feel the heat on your cheek, and watch sullenly glowing storms move in bands across the face of the red-hot superjovian world. To coldward, Phrixus and Helle were two glaring pink dots following each other down to the ridge. The Jet Stream stretched straight across the blue sky, a pinkish-white band of cloud from horizon to horizon. Thirty or forty multicolored balloons, linked in a cluster, were settling to graze a scum-covered rain pool in the valley below him.

Blue-tinged shadows pooled in the valley, and three human shapes moved through the red and orange vegetation. Bronze Legs recognized Lightning Harness and Grace Carpenter even at this distance. The third had a slightly hunchbacked look, and a metal headdress gleamed in her straight

black hair. That would be Rachel Subramaniam's memory recording equipment. Her head kept snapping left and right, ever eager for new sights.

Bronze Legs grinned. He tried to imagine how this must look to a rammer, an offworlder; he succeeded only in remembering himself as a child. All this strangeness; all this red.

He turned the howler and continued uphill.

At the crest of the ridge a fux waited for him, the pinkish-white suns behind her. She was a black silhouette, four thin legs and two thin arms, a pointed face and a narrow torso bent in an L: a lean, mean centaur-shape.

As he topped the ridge and let the howler settle on its air cushion, the fux backed away several meters. Bronze Legs wondered why, then guessed the answer. It wasn't the smell of him. Fuxes liked that. She was putting the ridge between herself and the white glare from Touchdown City's farming lamps. She said, "I am Long Nose."

"Bronze Legs. I meet you on purpose."

"I meet you on purpose. How goes your foray to heatward?"

"We start tomorrow at dawn."

"You postponed it once before." She was accusing him. The fuxes were compulsive about punctuality; an odd trait in a Bronze Age culture. Like certain traits in humans, it probably tied into their sex lives. Timing could be terribly important when a fux was giving birth.

"The ship from the stars came," he said. "We waited. We want to take one of the star people along, and the delay lets us recheck the vehicles."

Long Nose was black with dull dark-red markings. She bore a longbow over one shoulder and a quiver and shovel slung over her lower back. Her snout was sharply pointed, but not abnormally so, for a fux. She might be named for keen curiosity or a keen sense of smell. She said, "I learn that your purpose is more than exploration, but not even the post-males can tell what it is."

"Power," said Bronze Legs. "The harnessed lightning that makes our machines go comes as light from Argo. In the Hot End the clouds will never hide Argo from our sight. Our lightning makers can run without rest."

"Go north instead," said Long Nose. "You will find it safer and cooler too. Storms run constantly in the north; I have been there. Free lightning for your use."

If she'd been talking to Lightning Harness she would have suffered through an hour's lecture. How the heat exchangers ran on the flood of infrared light from Argo, focused by mirrors. How Argo stayed always in the same place in Medea's sky, so that mirrors could be mounted on a hillside facing to heatward, and never moved again. But the colony was growing, and Medea's constant storms constantly blocked the mirrors . . . Bronze Legs only grinned at her. "Why don't we just do it our way? Who-all is coming?"

''Only six of us. Dark Wind's children did not emerge in time. Deadeye will desert us early; she will give birth in a day and must stay to guard the . . . Is ''nest'' the word you use?''

''Right.'' Of all the words that might describe the fuxes' way of giving birth, ''nest'' carried the least unpleasant connotations.

''So, she will be guarding her 'nest' when we return. She will be male then. Sniffer intends to become pregnant tonight; she will leave us farther on, and be there to help us on our return, if we need help.''

''Good.''

''We take a post-male, Harvester, and another six-leg female, Broad Flanks, who can carry him some of the time. Gimpy wants to come. Will she slow us?''

Bronze Legs laughed. He knew Gimpy: a four-leg female as old as some post-males, who had lost her right foreleg to the viciously fast Medean monster humans called a B-70. Gimpy was fairly agile, considering. ''She could crawl on her belly for all we care. It's the crawlers that'll slow us, and the power plant. We're moving a lot of machinery: the prefab power plant, housing for technicians, sensing tools, digging tools—''

''What tools should we take?''

''Go armed. You won't need water bags; we'll make our own water. We made you some parasols from mirror-cloth. They'll help you stand the heat, for awhile. When it gets really hot you'll have to ride in the crawlers.''

''We will meet you at the crawling machines, at dawn.'' Long Nose turned and moved downslope into a red-and-orange jungle, moving something like a cat in its final rush at a bird: legs bent, belly low.

They had been walking since early afternoon: twelve hours, with a long break for lunch. Lightning sighed with relief as he set down the farming lamp he'd been carrying on his shoulders. Grace helped him spread the tripod and extend the mount until the lamp stood six meters tall.

Rachel Subramaniam sat down in the orange grass and rubbed her feet. She was puffing.

Grace Carpenter, a Medean xenobiologist in her early forties, was a large-boned woman, broad of silhouette and built like a farm wife. Lightning Harness was tall and lean and lantern-jawed, a twenty-four-year-old power plant engineer. Both were pale as ghosts beside Rachel. On Medea only the farmers were tanned.

Rachel was built light. Some of her memory recording equipment was embedded in padding along her back, giving her a slightly hunchbacked look. Her scalp implants were part of a polished silver cap, the badge of her profession. She had spent the past two years under the sunlights aboard a web ramship. Her skin was bronze. To Rachel Medea's pale citizens had seemed frail, unathletic, until now. Now she was annoyed. There had been little opportunity for hikes aboard *Morven*; but she might have noticed the muscles and hard hands common to any recent colony.

Lightning pointed uphill. ''Company.''

Something spidery stood on the crest of the coldward ridge, black against the suns. Rachel asked, ''What is it?''

''Fux. Female, somewhere between seven and eighteen years of age, and not a virgin. Beyond that I can't tell from here.''

Rachel was astonished. ''How can you know all that?''

''Count the legs. Grace, didn't you tell her about fuxes?''

Grace was chuckling. ''Lightning's showing off. Dear, the fuxes go fertile around age seven. They generally have their first litter right away. They drop their first set of hindquarters with the eggs in them, and that gives them half a lifetime to learn how to move as a quadruped. Then they wait till they're seventeen or eighteen to have their second litter, unless the tribe is underpopulated, which sometimes happens. Dropping the second set of hindquarters exposes the male organs.''

''And she's got four legs. 'Not a virgin.' I thought you must have damn good eyes, Lightning.''

''Not that good.''

''What are they like?''

''Well,'' said Grace, ''the post-males are the wise ones. Bright, talkative, and not nearly so . . . frenetic as the females. It's hard to get a female to stand still for long. The males . . . oh, for three years after the second litter they're kind of crazy. The tribe keeps them penned. The females only go near them when they want to get pregnant.''

Lightning had finished setting the lamp. ''Take a good look around before I turn this on. You know what you're about to see?''

Dutifully, Rachel looked about her, memorizing.

The farming lamps stood everywhere around Touchdown City; it was less a city than a village surrounded by farmlands. For more than a week Rachel had seen only the tiny part of Medea claimed by humans . . . until, in early afternoon of this long Medean day, she and Grace and Lightning had left the farmlands. The reddish light had bothered her for a time. But there was much to see; and after all, this was the *real* Medea.

Orange grass stood knee-high in slender leaves with sharp hard points. A score of flaccid multicolored balloons, linked by threads that resembled spiderweb, had settled on a stagnant pond. There was a grove of almost-trees, hairy rather than leafy, decked in all the colors of autumn. The biggest was white and bare and dead.

Clouds of bugs filled the air everywhere except around the humans. A pair of things glided into the swarms, scooping their dinner out of the air. They had five-meter wingspans, small bat-like torsos, and huge heads that were all mouth, with gaping hair-filled slits behind the head, where gill slits would be on a fish. Their undersides were sky blue.

A six-legged creature the size of a sheep stood up against the dead almost-tree, gripped it with four limbs, and seemed to chew at it. Rachel wondered if it was eating the wood. Then she saw myriads of black dots spread across the white, and a long, sticky tongue slurping them up.

Grace tapped Rachel's arm and pointed into the grass. Rachel saw a warrior's copper shield painted with cryptic heraldics. It was a flattened turtle shell, and the yellow-eyed beaked face that looked back at her was not turtle-like at all. Something small struggled in its beak. Suddenly the not-turtle whipped around and *zzz*ed away on eight churning legs. There was no bottom shell to hamper the legs.

The *real* Medea.

''Now,'' said Lightning. He turned on the farming lamp.

White light made the valley suddenly less alien. Rachel felt something within her relaxing . . . but things were happening all around her.

The flat turtle stopped abruptly. It swallowed hard, then pulled head and limbs under its shell. The flying bug-strainers whipped around and flew hard for the hairy trees. The clouds of bugs simply vanished. The long-tongued beast let go of its tree, turned and scratched at the ground and was gone in seconds.

''This is what happens when a sun flares,'' Lightning said. ''They're both flare suns. Flares don't usually last more than half an hour, and most Medean animals just dig in till it's over. A lot of plants go to seed. Like this grass—''

Yes, the slender leaves were turning puffy, cottony. But the hairy trees reacted differently; they were suddenly very slender, the foliage pulled tight against the trunks. The balloons weren't reacting at all.

Lightning said, ''That's why we don't worry much about Medean life attacking the crops. The lamps keep them away. But not all of them—''

''On Medea every rule has exceptions,'' Grace said.

''Yeah. Here, look under the grass.'' Lightning pushed cotton-covered leaves aside with his hands, and the air was suddenly full of white fluff. Rachel saw millions of black specks covering the lower stalks. ''We call them locusts. They swarm in flare time and eat everything in sight. Terran plants poison them, of course, but they wreck the crops first.'' He let the leaves close. By now there was white fluff everywhere, like a low-lying fog patch moving east on the wind. ''What else can I show you? Keep your eyes on the balloons. And are there cameras in that thing?''

Rachel laughed and touched the metal helmet. Sometimes she could forget she was wearing it; but her neck was thicker, more muscular than the average woman's. ''Cameras? In a sense. My eyes are cameras for the memory tape.''

The balloons rested just where they had been. The artificial flare hadn't affected them . . . wait, they weren't flaccid any more. They were swollen, taut, straining at the rootlets that held them to the bottom of the pond. Suddenly they rose, all at once, still linked by spiderweb. Beautiful.

''They use the UV for energy to make hydrogen,'' said Grace. ''UV wouldn't bother them anyway; they have to take more of it at high altitude.''

''I've been told . . . are they intelligent?''

''Balloons? No!'' Grace actually snorted. ''They're no brighter than so much seaweed . . . but they own the planet. We've sent probes to the Hot End, you know. We saw balloons all the way. And we've seen them as far coldward . . . west, you'd say . . . as far west as the Icy Sea. We haven't gone beyond the rim of ice yet.''

''But you've been on Medea fifty years?''

''And just getting started,'' Lightning said. He turned off the farming lamp.

The world was plunged into red darkness.

The fluffy white grass was gone, leaving bare soil aswarm with black specks. Gradually the hairy trees loosened, fluffed out. Soil churned near the dead tree and released the tree feeder.

Grace picked up a few of the ''locusts''. They were no bigger than termites. Held close to the eye they each showed a translucent bubble on its back. ''They can't swarm,'' Grace said with satisfaction. ''The flare didn't last long enough. They couldn't make enough hydrogen.''

''Some did,'' Lightning said. There were black specks on the wind; not many.

''Always something new,'' said Grace.

Tractor probe Junior was moving into the Hot End. Ahead was the vast desert, hotter than boiling water, where Argo stood always at high noon. Already the strange dry plants were losing their grip, leaving bare rock and dust. At the final shore of the Ring Sea the waves were sudsy with salt in solution, and the shore was glittering white. The hot steamy wind blew inland, to heatward, and then upward, carrying a freight of balloons.

The air was full of the multicolored dots, all going up into the stratosphere. At the upper reach of the probe's vision some of the frailer balloons were popping, but the thin membranous corpses still fluttered toward heaven.

Rachel shifted carefully in her chair. She caught Bronze Legs Miller watching her from a nearby table. Her answering grin was rueful.

She had not finished the hike. Grace and Lightning had been setting up camp when Bronze Legs Miller came riding down the hill. Rachel had grasped that golden opportunity. She had returned to Touchdown City riding behind Bronze Legs on the howler's saddle. After a night of sleep she still ached in every muscle.

''Isn't it a gorgeous sight?'' Mayor Curly Jackson wasn't eating. He watched avidly, with his furry chin in his hands and his elbows on the great oaken table—the dignitaries' table the Medeans were so proud of; it had taken forty years to grow the tree.

Medea had changed its people. Even the insides of buildings were different from those of other worlds. The communal dining hall was a great dome lit by a single lamp at its zenith. It was bright, and it cast sharp shadows. As if the early colonists, daunted by the continual light show—the flare suns, the bluish farming lamps, the red-hot storms moving across Argo—had given themselves a single sun indoors. But it was a wider, cooler sun, giving yellower light than a rammer was used to.

One great curve of the wall was a holograph projection screen. The tractor probe was tracing the path the expedition would follow and broadcasting what it saw. Now it moved over hills of white sea salt. The picture staggered and lurched with the probe's motion, and wavered with rising air currents.

Captain Janice Borg, staring avidly with a forkful of curry halfway to her mouth, jumped as Mayor Curly lightly punched her shoulder. The Mayor was blue eyes and a lump of nose poking through a carefully tended wealth of blond hair and beard. He was darkened by farming lamps. Not only did he supervise the farms; he farmed. "See it, Captain? That's why the Ring Sea is mostly fresh water."

Captain Borg's hair was auburn going gray. She was handsome rather than pretty. Her voice of command had the force of a bullwhip; one obeyed by reflex. Her off-duty voice was a soft, dreamy contralto. "Right. Right. The seawater moves always to the Hot End. It starts as glaciers, doesn't it? They break off in the Icy Sea and float heatward. Any salt goes that way too. In the Hot End the water boils away . . . and you get some tides, don't you? Argo wobbles a little?"

"Well, it's Medea that wobbles a little, but—"

"Right, so the seawater spills off into the salt flats at high tide and boils away there. And the vapor goes back to the glaciers along the Jet Stream." She turned suddenly to Rachel and barked, "You getting all this?"

Rachel nodded, hiding a smile. More than two hundred years had passed on the settled worlds while Captain Borg cruised the trade circuit. She didn't really understand memory tapes. They were too recent.

Rachel looked about the communal dining hall and was conscious as always of the vast unseen audience looking through her eyes, listening through her ears, feeling the dwindling aches of a stiff hike, tasting blazing hot Medean curry through her mouth. It was all going into the memory tape, with no effort on her part.

Curly said, "We picked a good site for the power plant before the first probe broke down. Heatward slope of a hillside. We'll be coming up on it in a few hours. Is this the kind of thing you want, or am I boring you?"

"I want it all. Did you try that tape?"

The Mayor shook his head, his eyes suddenly evasive.

''Why not?''

''Well,'' the Mayor said slowly, ''I'm a little leery of what I might remember. It's all filtered through your brain, isn't it, Rachel?''

''Of course.''

''I don't think I'd like remembering being a girl.''

Rachel was mildly surprised. Role-changing was part of the kick. Male or female, an epicurean or a superbly muscled physical culture addict or an intellectual daydreamer, a child again or an old woman . . . well, some didn't like it. ''I could give you a man's tape, Curly. There's McAuliffe's balloon trip into the big gas giant in Sol system.''

Captain Borg cut in sharply. ''What about the Charles Baker Sontag tape? He did a year's tour in Miramon Lluagor system, Curly. The Lluagorians use balloons for everything. You'd love it.''

Curly was confused. ''Just what kind of balloons—''

''Not living things, Curly. Fabric filled with gas. Lluagor has a red dwarf sun. No radiation storms and not much ultraviolet. They have to put their farms in orbit, and they do most of their living in orbit, and it's all inflated balloons, even the spacecraft. The planet they use mainly for mining and factories, but it's pretty, too, so they've got cities slung under hundreds of gasbags.''

The tractor probe lurched across mile after mile of dim-lit pink salt hills. Rachel remembered a memory tape in *Morven*'s library: a critical reading of the Elder and Younger Eddas by a teacher of history and poetry. Would Medeans like that? Here you had the Land of the Frost Giants and the Land of the Fire Giants, with Midgard between . . . and the Ring Sea to stand in for the Midgard Serpent . . . and no dearth of epic monsters, from what she'd heard.

Captain Borg spoke with an edge in her voice. ''Nobody's going to force you to use a new and decadent entertainment medium from the stars, Curly—''

''Oh, now, I didn't—''

''But there's a point you might consider. Distance.''

''Distance?''

''There's the trade circuit. Earth, Toupan, Lluagor, Sereda, Horvendile, Koschei, Earth again. Six planets circling six stars a few light years apart. The web ramships go round and round, and everyone on the ring gets news, entertainment, seeds and eggs, new inventions. There's the trade circuit, and there's Medea. You're too far from Horvendile, Curly.''

''Oddly enough, we're aware of that, Captain Borg.''

''No need to get huffy. I'm trying to make a point.''

''Why did *you* come?''

''Variety. Curiosity. The grass-is-always-greener syndrome. The same thing that made us rammers in the first place.'' Captain Borg did not add altruism, the will to keep the worlds civilized. "But will we keep coming? Curly, Medea is the strangest place that ever had a breathable atmosphere. You've got a potential tourist trap here. You could have ramships dropping by every twenty years!"

"We need that."

"Yes, you do. So remember that rammers don't build starships. It's taxpayers that build starships. What do they get out of it?"

"Memory tapes?"

"Yes. It used to be holos. Times change. Holos aren't as involving as memory tapes, and they take too long to watch. So it's memory tapes."

"Does that mean we have to use them?"

"No," said Captain Borg.

"Then I'll try your tourist's view of Lluagor system, when I get time." Curly stood. "And I better get going. Twenty-five hours to dawn."

"It only takes ten minutes," Rachel said.

"How long to recover? How long to assimilate a whole year of someone else's memories? I better wait."

After he was gone, Rachel asked, "What was wrong with giving him the Jupiter tape?"

"I remembered McAuliffe was a homosexual."

"So what? He was all alone in that capsule."

"It might matter to someone like Curly. I don't say it would, I say it might. Every world is different."

"You ought to know." The rumor mill said that Mayor Curly and Captain Borg had shared a bed. Though he hadn't shown it . . .

Too lightly, Captain Borg said, "I should but I don't."

"Oh?"

"He's . . . closed. It's the usual problem, I think. He sees me coming back in sixty or seventy years, and me ten years older. Doesn't want to get involved."

"Janice?"

"Dammit, if they're so afraid of change, how could their parents have busted their asses to settle a whole new world? Change is the one thing . . . yeah? What is it?"

"Did you ask him, or did he ask you?"

Captain Borg frowned. "He asked me. Why?"

"Nobody's asked me," said Rachel.

"Oh. . . . Well, ask someone. Customs differ."

"But he asked you."

"I dazzled him with sex appeal. Or maybe not. Rachel, shall I ask Curly? There might be something we don't know. Maybe you wear your hair wrong."

Rachel shook her head. "No."

"But . . . okay. The rest of the crew don't seem to be having problems."

* * *

Nearly dawn. The sky was thick with dark clouds, but the heatward horizon was clear, with Argo almost fully risen. The dull red disk would never rise completely, not here. Already it must be sinking back.

It was earthnight now; the farming lamps were off. Crops and livestock kept terrestrial time. Rows of green plants stretched away to the south, looking almost black in this light. In the boundary of bare soil between the wilds and the croplands, half a dozen fuxes practiced spear casts. That was okay with Bronze Legs. Humans didn't spend much time in that border region. They plowed the contents of their toilets into it, to sterilize it of Medean microorganisms and fertilize it for next year's crops. The fuxes didn't seem to mind the smell.

Bronze Legs waited patiently beside his howler. He wished Windstorm would do the same.

The two house-sized crawlers were of a pattern familiar to many worlds: long, bulbous pressure hulls mounted on ground-effect platforms. They were decades old, but they had been tended with loving care. Hydrogen fuel cells powered them. One of the crawlers now carried, welded to its roof, a sender capable of reaching *Morven* in its present equatorial orbit: another good reason for waiting for the web ramship's arrival.

The third and largest vehicle was the power plant itself, fully assembled and tested, mounted on the ground-effect systems from two crawlers and with a crawler's control cabin welded on in front. It trailed a raft: yet another ground-effect system covered by a padded platform with handrails. The fuxes would be riding that.

All vehicles were loaded and boarded well ahead of time. Windstorm Wolheim moved among them, ticking off lists in her head and checking them against what she could see. The tall, leggy redhead was a chronic worrier.

Phrixus (or maybe Helle) was suddenly there, a hot pink point near Argo. The fuxes picked up their spears and trotted off northward. Bronze Legs lifted his howler on its air cushion and followed. Behind him the three bigger vehicles whispered into action, and Windstorm ran for her howler.

Rachel was in the passenger seat of the lead crawler, looking out through the great bubble windscreen. In the Hot End the crawlers would house the power plant engineers. Now they were packed with equipment. Square kilometers of thin silvered plastic sheet, and knock-down frames to hold it all, would become solar mirrors. Black plastic and more frames would become the radiator fins, mounted on the back of that hill in the Hot End. There were spools of superconducting cable and flywheels for power storage. Rachel kept bumping her elbow on the corner of a crate.

The pinkish daylight was dimming, graying, as the Jet Stream spread to engulf the sky. The fuxes were far ahead, keeping no obvious formation. In this light they seemed a convocation of mythical monsters: centaurs, eight-limbed dragons, a misshapen dwarf. The dwarf was oddest of all. Rachel had seen him close: A nasty caricature of a man, with a foxy face, huge buttocks, exaggerated male organs, and (the anomaly) a tail longer than he was tall. Yet Harvester was solemn and slow-moving, and he seemed to have the respect of fuxes and humans both.

The vehicles whispered along at thirty kilometers an hour, uphill through orange grass, swerving around hairy trees. A fine drizzle began. Lightning Harness turned on the wipers.

Rachel asked, "Isn't this where we were a few days back?"

"Medean yesterday. That's right," said Grace.

"Hard to tell. We're going north, aren't we? Why not straight east?"

"It's partly for our benefit, dear. We'll be in the habitable domains longer. We'll see more variety; we'll both learn more. When we swing around to heatward we'll be nearer the north pole. It won't get hot so fast."

"Good."

Bronze Legs and a woman Rachel didn't know flanked them on the one-seater ground-effect vehicles, the howlers. Bronze Legs wore shorts, and in fact his legs were bronze. Black by race, he'd paled to Rachel's color during years of Medean sunlight. Rachel asked, half to herself, "Why not just Bronze?"

Grace understood. "They didn't mean his skin."

"What?"

"The fuxes named him for the time his howler broke down and stranded him forty miles from civilization. He walked home. He was carrying some heavy stuff, but a troop of fuxes joined him and they couldn't keep up. They've got lots of energy but no stamina. So they named him Bronze Legs. Bronze is the hardest metal they knew, till we came."

The rain had closed in. A beast like yesterday's flying bug-strainers took to the air almost under the treads. For a moment it was face to face with Rachel, its large eyes and tremendous mouth all widened in horror. A wing ticked the windshield as it dodged.

Lightning cursed and turned on the headlights. As if by previous agreement, lights sprang to life on the howlers and the vehicles behind. "We don't like to do that," said Lightning.

"Do what?"

"Use headlights. Every domain is different. You never know what the local life will do when a flare comes, not till you've watched it happen. Here it's okay. Nothing worse than locusts."

Even the headlights had a yellowish tinge, Rachel thought.

The gray cliffs ahead ran hundreds of kilometers to heatward and coldward. They were no more than a few hundred feet high, but they were fresh and new. Medea wobbled a little in its course around Argo, and the tides could raise savage quakes. All the rocks had sharp angles; wind and life had not had a chance to wear them down.

The pass was new too, as if God had cleft the spine of the new mountains with a battle-ax. The floor of it was filled with rubble. The vehicles glided above the broken rock, riding high, with fans on maximum.

Now the land sloped gently down, and the expedition followed. Through the drizzle Bronze Legs glimpsed a grove of trees, hairy trees like those near Touchdown City, but different. They grew like spoons standing on end, with the cup of the spoon facing Argo. The ground was covered with tightly curled black filaments, a plant the color and texture of Bronze Legs' own hair.

They had changed domain. Bronze Legs hadn't been in this territory, but he remembered that Windstorm had. He called, ''Anything unexpected around here?''

''B-70s.''

''They do get around, don't they? Anything else?''

''It's an easy slope down to the shore,'' Windstorm called, ''but then there's a kind of parasitic fungus floating on the ocean. Won't hurt us, but it can kill a Medean animal in an hour. I told Harvester. He'll make the others wait for us.''

''Good.''

They rode in silence for a bit. Drizzle made it hard to see much. Bronze Legs wasn't worried. The B-70s would stay clear of their headlights. This was explored territory; and even after they left it, the probes had mapped their route.

''That professional tourist,'' Windstorm called suddenly. ''Did you get to know her?''

''Not really. What about her? Mayor Curly said to be polite.''

''When was I ever not polite? But I didn't grow up with her, Bronze Legs. Nobody did. We know more about fuxes than we do about rammers, and this one's peculiar for a rammer! How could a woman give up all her privacy like that?''

''You tell me.''

''I wish I knew what she'd do in a crunch.''

''At least she wouldn't close her eyes. She's a dedicated tourist. Can you picture that? But she might not get involved either.'' Bronze Legs thought hard before he added, ''I tried one of those memory tapes.''

''What? You?''

''*History of the Fission Period in Eurasia, 1945–2010*, from *Morven*'s library. Education, not entertainment.''

''Why that?''

''Whim.''

''Well, what's it like?''

''It's . . . it's like I did a lot of research, and formed conclusions and checked them out and sometimes changed my mind, and it gave me a lot of satisfaction. There are still some open questions, like how the Soviets actually got the fission bomb, and the Vietnam War, and the Arab Takeover. But I know who's working on that, and . . . It's like that, but it doesn't connect to anything. It sits in my head in a clump. But it's kind of fun, Windstorm, and I got it all in ten minutes. You want to hear a libelous song about President Peanut?"

"No."

Through the drizzle they could see the restless stirring of the Ring Ocean. A band of fuxes waited on the sand. Windstorm turned her howler in a graceful curve, back toward the blur of the crawlers' headlights, to lead them. Bronze Legs dowsed his lights and glided toward the fuxes.

They had chosen a good resting place, far from the dangerous shore, in a broad stretch of "black man's hair" that any marauder would have to cross. Most of the fuxes were lying down. The four-legged female had been impregnated six Medean days ago. Her time must be near. She scratched with sharp claws at her itching hindquarters.

Harvester came to meet Bronze Legs. The post-male biped was slow with age, but not clumsy. That tremendous length of black tail was good for his balance. It was tipped with a bronze spearhead. Harvester asked, "Will we follow the shoreline? If we may choose, we will keep your vessels between us and the shore."

"We plan to go straight across," Bronze Legs told him. "You'll ride the raft behind the bigger vessel."

"In the water are things dangerous to us," said Harvester. He glanced shoreward and added, "Things small, things large. A large one comes."

Bronze Legs took one look and reached for his intercom. "Lightning, Hairy, Jill! Turn your searchlights on that thing, fast!"

The fuxes were up and reaching for their spears.

"So it's the fuxes who give you your nicknames," Rachel said. "Why did they call you Lightning?"

"I tend the machines that make lightning and move it through metal wires. At least, that's how we explained it to the fuxes. And Windstorm— You saw the big redheaded girl on the other howler? She was on guard one earthnight when a troop of fuxes took a short cut through the wheat crop. She really gave them hell. Half of Touchdown City must have heard her."

"And you? Grace."

"They named me when I was a lot younger." Grace glared at Lightning, who was very busy driving and clearly not listening, and by no means was he smiling. "But they didn't call me Grace. The way we have children, the fuxes think that's hilarious."

Rachel didn't ask.

"They called me Boobs."

Rachel felt the need for a change of subject. ''Lightning, are you getting tired? Would you like me to take over?''

''I'm okay. Can you drive a crawler?''

''Actually, I've never done it. I can run a howler, though. In any terrain.''

''Maybe we'll give you one after—''

Then Bronze Legs' voice bellowed from the intercom.

Something came out of the ocean: a great swollen myriapod with tiny jointed arms moving around a funnel-shaped mouth. Teeth churned in the gullet.

The fuxes cast their spears and fled. Bronze Legs tucked Harvester under one arm and sped shoreward; the howler listed to port. Deadeye fell behind; two fuxes turned back and took her arms and pulled her along.

The monster flowed up the beach, faster than any of them, ignoring the spears stuck in its flesh.

One, two, three searchlights flashed from the vehicles and played over the myriapod. The beams were bluish, unlike the headlights. Flare sunlight.

The myriapod stopped. Turned, clumsily, and began to retreat down the beach. It had nearly reached the water when it lost coordination. The legs thrashed frantically and without effect. As Rachel watched in horrified fascination, things were born from the beast.

They crawled from its back and sides. Hundreds of them. They were dark red and dog-sized. They did not leave the myriapod; they stayed on it, feeding. Its legs were quiet now.

Three of the fuxes darted down the beach, snatched up their fallen spears and retreated just as fast. The myriapod was little more than a skeleton now, and the dog-sized feeders were beginning to spread across the sand.

The fuxes climbed aboard the air-cushioned raft that trailed behind the mobile power plant. They arranged their packs and settled themselves. The paired vehicles lifted and glided toward the water. Lightning lifted the crawler and followed.

Rachel said, ''But—''

''We'll be okay,'' Lightning assured her. ''We'll stay high and cross fast, and there are always the searchlights.''

''Grace, tell him! There are animals that like the searchlights!''

Grace patted her hand. The expedition set off across the water.

The colony around Touchdown City occupied part of a fat peninsula projecting deep into the Ring Sea. It took the expedition twelve hours to cross a bay just smaller than the Gulf of Mexico.

Vermilion scum patches covered the water. Schools of flying non-fish veered and dived at sight of the wrong-colored headlights. The fuxes stayed flat on their platform . . . but the water was smooth, the ride was smooth, and nothing attacked them.

The rain stopped, and left Phrixus and Helle far up the morning sky. The cloud-highway of the Jet Stream showed through a broken cloud deck. Lightning and the other drivers left their headlights on, since the sea life seemed to avoid them.

Somewhere in there, Rachel reclined her chair and went to sleep.

She woke when the crawler settled and tilted under her. Her brain was muzzy . . . and she had slept with the recorder on. That disturbed her. Usually she switched it off to sleep. Dreams were private.

The crawler's door had dropped to form a stairway, and the crawler was empty. Rachel went out.

The crawlers, howlers, raft and mobile power plant were parked in a circle, and tents had been set up inside. There was no living human being in sight. Rachel shrugged; she stepped between a howler and the raft, and stopped.

This was nothing like the Medea she'd seen up to now.

Rolling hills were covered with chrome yellow bushes. They stood waist high, and so densely packed that no ground was visible anywhere. Clouds of insects swarmed, and sticky filaments shot up from the bushes to stab into the swarms.

The fuxes had cut themselves a clearing. They tended one who was restless, twitching. Bronze Legs Miller hailed her from their midst.

Rachel waded through the bushes. They resisted her like thick tar. The insects scattered away from her.

''Deadeye's near her time,'' Bronze Legs said. ''Poor baby. We won't move on until she's dropped her 'nest'.''

The fux showed no swelling of pregnancy. Rachel remembered what she had been told of the fux manner of bearing children. Suddenly she didn't want to see it. Yet how could she leave? She would be omitting a major part of the experience of Medea.

She compromised. She whispered earnestly to Bronze Legs, ''Should we be here? Won't they object?''

He laughed. ''We're here because we make good insect repellants.''

''No. We like humans.'' Deadeye's voice was slurred. Now Rachel saw that the left eye was pink, with no pupil. ''Are you the one who has been among the stars?''

''Yes.''

The feverish fux reached up to take Rachel's hand. ''So much strangeness in the world. When we know all of the world, it may be we will go among the stars too. You have great courage.'' Her fingers were slender and hard, like bones. She let go to claw at the hairless red rash between her front and back legs. Her tail thrashed suddenly, and Bronze Legs dodged.

The fux was quiet for a time. A six-legged fux sponged her back with water; the sponge seemed to be a Medean plant. Deadeye said, "I learned from humans that 'deadeye' meant 'accurate of aim'. I set out to be the best spear-caster in . . ." She trailed off into a language of barking and yelping. The odd-looking biped held conversation with her. Perhaps he was soothing her.

Deadeye howled—and fell apart. She crawled forward, pulling against the ground with hands and forefeet, and her hindquarters were left behind. The hindquarters were red and dripping at the juncture, and the tail slid through them: more than a meter of thick black tail, stained with red, and as long as Harvester's now. The other fuxes came forward, some to tend Deadeye, some to examine the hindquarters . . . in which muscles were still twitching.

Ten minutes later Deadeye stood up. He made it look easy; given his tail and his low center of mass, perhaps it was. He spoke in his own language, and the fuxes filed away into the yellow bushes. In the human tongue Deadeye said, "I must guard my nest. Alone. Travel safely."

"See you soon," Bronze Legs said. He led Rachel after the fuxes. "He won't want company now. He'll guard the 'nest' till the little ones eat most of it and come out. Then he'll go sex-crazy, but by that time we'll be back. How are you feeling?"

"A little woozy," Rachel said. "Too much blood."

"Take my arm."

The color of their arms matched perfectly.

"Is she safe here? I mean he. Deadeye."

"He'll learn to walk faster than you think, and he's got his spear. We haven't seen anything dangerous around. Rachel, they don't have a safety hangup."

"I don't understand."

"Sometimes they get killed. Okay, they get killed. Deadeye has his reasons for being here. If his children live, they'll own this place. Some of the adults'll stay to help them along. That's how they get new territory."

Confusing. "You mean they have to be born here?"

"Right. Fuxes visit. They don't conquer. After awhile they have to go home. Grace is still trying to figure if that's physiology or just a social quirk. But sometimes they visit to give birth, and that's how they get new homes. I don't think fuxes'll ever be space travelers."

"We have it easier."

"That we do."

"Bronze Legs, I want to make love to you."

He missed a step. He didn't look at her. "No. Sorry."

"Then," she said a little desperately, "will you at least tell me what's wrong? Did I leave out a ritual, or take too many baths or something?"

Bronze Legs said, "Stage fright."

He sighed when he saw that she didn't understand. "Look, ordinarily

I'd be looking for some privacy for us . . . which wouldn't be easy, because taking your clothes off in an unfamiliar domain . . . never mind. When I make love with a woman I don't want a billion strangers criticizing my technique.''

''The memory tapes.''

''Right. Rachel, I don't know *where* you find men who want that kind of publicity. Windstorm and I, we let a post-male watch us once . . . but after all, they aren't *human.*''

''I could turn off the tape.''

''It records memories, right? Unless you forgot about me completely, which I choose to consider impossible, you'd be remembering me for the record. Wouldn't you?''

She nodded. And went back to the crawler to sleep. Others would be sleeping in the tents; she didn't want the company.

The howler's motor was half old, half new. The new parts had a handmade look: bulky, with file marks. One of the fans was newer, cruder, heavier than the other. Rachel could only hope the Medeans were good with machinery.

The tough-looking redhead asked, ''Are you sure you want to go through with this?''

''I took a howler across most of Koschei,'' Rachel told her. She straightened, then swung up onto the saddle. Its original soft plastic seat must have disintegrated; what replaced it looked and felt like tanned skin. ''Top speed, a hundred and forty kilometers an hour. Override—this switch—boosts the fans so I can fly. Ten minutes of flight, then the batteries block up and I've got to come down. Six slots in the ground-effect skirt so I can go in any direction. The main thing is to keep my balance. Especially when I'm flying.''

Windstorm did not seem reassured. ''You won't get that kind of performance out of a fifty-year-old machine. Treat it tender. And don't fly if you're in a hurry, because you'll be using most of the power just to keep you up. Two more things—'' She reached to put Rachel's hands on a switch and a knob. Her own hands were large and strong, with prominent veins. ''Searchlight. This knob swings it around, and *this* raises and lowers it. It's your best weapon. If it doesn't work, flee. Second thing is your goggles. Sling them around your neck.''

''Where are they?''

Windstorm dug goggles from the howler's saddlebag: a flexible strap and two large hemispheres of red glass. A similar set swung from her own neck. ''You should never have to ask that question again on Medea. Here.''

The other vehicles were ready to go. Windstorm jogged to her own howler, leaving Rachel with the feeling that she had failed a test.

It was past noon of the Medean day. Harvester was riding Giggles, the six-legged virgin. The rest of the fuxes rode the ground-effect raft. The vehicles rode high, above the forest of chrome yellow bushes.

Windstorm spoke from the intercom. "We stay ahead of the crawlers and to both sides. We're looking for anything dangerous. If you see something you're afraid of, sing out. Don't wait."

Rachel eased into position. The feel of the howler was coming back to her. It weighed half a ton, but you still did some of your steering by shifting weight . . . "Windstorm, aren't you tired?"

"I got some sleep while Deadeye was dropping her hindquarters."

Maybe Windstorm didn't trust anyone else to supervise the rammer. Rachel was actually relieved. It struck her that most Medeans had lost too many of their "safety hangups".

The bushes ended sharply, at the shore of a fast-flowing river carrying broad patches of scarlet scum. Some of the patches bloomed with flowers of startling green. Harvester boarded the raft to cross.

There was wheatfield beyond, but the yellow plants were feathery and four meters high. Hemispheres of white rock appeared with suspicious regularity. The expedition had swung around to north-and-heatward. Argo stood above the peaks of a rounded mountain range. Many-limbed birds rode the air above them.

Rachel looked up to see one dropping toward her face.

She could see the hooked beak and great claws aiming at her eyes. Her blind fingers sought the searchlight controls. She switched on the searchlight and swung the beam around and up. Like a laser cannon: *first* fire, *then* aim. Calmly, now.

The beam found the bird and illuminated it in blue fire: a fearsome sight. Wings like oiled leather, curved meat-ripping beak, muscular forelegs with long talons; and the hind legs were long, slender, and tipped each with a single sword blade. They weren't for walking at all, nor for anything but weaponry.

The bird howled, shut its eyes tight, and tried to turn in the air. Its body curled in a ball; its wings folded around it. Rachel dropped the beam to keep it pinned until it smacked hard into the wheatfield.

The intercom said, "Nice."

"Thank you." Rachel sounded deceptively calm.

"Grace wants to call a halt," Windstorm said. "Up by that next boulder."

"Fine."

The boulders were all roughly the same size: fairly regular hemispheres one and a half meters across.

Grace and Bronze Legs came out of the crawler lugging instruments on a dolly. They unloaded a box on one side of the boulder, and Grace went to work on it. Bronze Legs moved the dolly around to the other side and unfurled a silver screen. When Rachel tried to speak, Grace shushed her. She fiddled a bit with various dials, then turned on the machine.

A shadow-show formed on the screen: a circle of shadow, and darker shapes within. Grace cursed and touched dials, feather-lightly. The blurred shadows took on detail.

Shadows of bones, lighter shadows of flesh. There were four oversized heads, mostly jaws, overlapping near the center; and four tails near the rim, and a maze of legs and spines between. Four creatures all wrapped intimately around each other to just fill the shell.

''I knew it!'' Grace cried. ''They were too regular. They had to be eggs or nests or plants or *something* like that. Windstorm, dear, if we pile this junk back on the dolly, can you tow it to the next rock?''

They did that. The next rock was very like the first: an almost perfect hemisphere with a surface like white plaster. Rachel rapped it with her knuckles. It felt like stone. But the deep-radar shadow showed three big-headed foetuses just filling their environment, plus a tiny one that had failed to grow.

''Well. They all seem to be at the same stage of development,'' Grace observed. ''I wonder if it's a seasonal thing?''

Rachel shook her head. ''It's different every time you turn around. Lord! You learn a place, you walk a couple of kilometers, you have to start all over again. Grace, don't you ever get frustrated? You can't run fast enough to stay in one place!''

''I love it. And it's worse than you think, dear.'' Grace folded the screen and stacked it on the dolly. ''The domains don't stay the same. We have spillovers from other domains, from high winds and tidal slosh and migration. I'd say a Medean ecology is ruined every ten years. Then I have to learn it all over again. Windstorm, dear, I'd like to look at one more of these rock eggs. Will you tow—''

The windstorm was sudden and violent. ''Damn it, Grace, this isn't the way we planned it! We do our biological research on the way back! *After* we set up the power system, *then* we can give the local monsters a chance to wreck us.''

Grace's voice chilled. ''Dear, it seems to me that this bit of research is quite harmless.''

''It uses up time and supplies. We'll do it on the way back, when we know we've *got* the spare time. We've been through this. Pack up the deep-radar and let's move.''

Now the rolling hills of feather-wheat sloped gently up toward an eroded mountain range whose peaks seemed topped with pink cotton. The three-legged female, Gimpy, trotted alongside Rachel, talking of star travel. Her gait was strange, rolling, but she kept up as long as Rachel held her howler to the power plant's twenty KPH.

She could not grasp interstellar distances. Rachel didn't push. She spoke of wonders instead: of the rings of Saturn, and the bubble cities of Lluagor, and the Smithpeople, and the settling of whale and dolphin colonies in strange oceans. She spoke of time compression: of gifting Sereda with designs for crude steam engines and myriads of wafer-sized computer brains, and returning to find steam robots everywhere: farmland, city streets, wilderness, households, disneylands; of fads that could explode across a planet and vanish without a trace, like tobacco pipes on Koschei, op-art garments on Earth, weight lifting on low gravity Horvendile.

It was long before she got Gimpy talking about herself.

"I was of my parent's second litter, within a group that moved here to study your kind," Gimpy said. "They taught us bow and arrow, and a better design of shovel, and other things. We might have died without them."

"The way you said that: second litter. Is there a difference?"

"Yes. One has the first litter when one can. The second litter comes to one who proves her capability by living that long. The third litter, the male's litter, comes only with the approval of one's clan. Else the male is not allowed to breed."

"That's good genetics." Rachel saw Gimpy's puzzlement. "I mean that your custom makes better fuxes."

'It does. I will never see my second litter," Gimpy said. "I was young when I made my mistake, but it was foolish. The breed improves. I will not be a one-legged male."

They moved into a rift in the eroded mountain range, and the incredible became obvious. The mountains were topped with pink cotton candy. It must have been sticky like cotton candy, too. Rachel could see animals trapped in it. Gimpy wanted no part of that. She dropped back and boarded the raft.

They crossed the cotton candy with fans blasting at maximum. The big vehicles blew pink froth in all directions. Something down there wasn't trapped at all. A ton of drastically flattened pink snail, with a perfect snail shell perched jauntily on its back, cruised over the cotton candy leaving a slime trail that bubbled and expanded to become more pink froth. It made for the still corpse of a many-limbed bird, flowed over it, and stopped to digest it.

The strangeness was getting to Rachel; and that was a strange thing for her. She was a rammer. Strangeness was the one constant in her life. Born aboard a ramship, not *Morven*, she had already gone once around the trade circuit. Even a rammer who returned to a world he knew must expect to find it completely changed; and Rachel *knew* that. But the strangeness of Medea came faster than she could swallow it or spit it out.

She fiddled with the intercom until she got Grace.

"Yes, dear, I'm driving. What is it?"

"It's confusion. Grace, why aren't all planets like Medea? They've all got domains, don't they? Deserts, rain forests, mountains, poles and equators . . . you see what I mean?''

She heard the xenobiologist's chuckle. ''Dear, the Cold Pole is covered with frozen carbon dioxide. Where we're going it's hotter than boiling water. What is there on the trade circuit worlds that splits up the domains? Mountain ranges? An ocean for a heat sink? Temperature, altitude, rainfall? Medea has all of that, plus the one-way winds and the one-way ocean currents. The salinity goes from pure water to pure salt. The glaciers carry veins of dry ice heatward, so there are sudden jumps in the partial pressure of carbon dioxide. Some places there are no tides. Other places, Argo wobbles enough to make a terrific tidal slosh. Then again, everything has to adapt to the flares. Some animals have shells. Some sea beasts can dive deep. Some plants seed, others grow a big leaf for an umbrella.''

Beyond the pass the mountains dropped more steeply, down to an arm of the Ring Sea. Rachel had no problem controlling the howler, but the mobile power plant was laboring hard, with its front vents wide open to hold it back and little pressure left for steering. There should be no real danger. Two probes had mapped this course.

''Everything is *more* different, huh?''

''Excuse me, dear . . . that's got it. Sonofabitch, we could live without that sonofabitching tail wind. Okay. Do you remember the mock turtle we showed you yesterday evening? We've traced it six thousand kilometers to coldward. In the Icy Sea it's seagoing and much larger. Follow it heatward and it gets smaller and more active. We think it's the food supply. Glaciers stir up the bottom, and the sea life loves that. To heatward a bigger beast starves . . . sometimes. But we could be wrong. Maybe it has to conserve heat in the colder climates. I'd like to try some experiments, someday.''

The white boulders that turned out to be giant eggs were thicker here on the heatward slopes. And on the lower slopes— But this was *strange*.

The mountainsides were gay with pennants. Thousands of long, flapping flags, orange or chrome yellow. Rachel tried to make it out. Grace was still talking; Rachel began to feel she'd opened a Pandora's Box.

''The closer you look to the Hot Pole, the more competition you find among the sea life. New things flow in from coldward, constantly. All the six-limbed and eight-limbed forms, we think they were forced onto the land, kicked out of the ocean by something bigger or meaner. They left the ocean before they could adopt the usual fish shape, which is four fins and a tail.''

''Grace, wait a minute, now. Are you saying . . . we . . .''

''Yes, dear.'' The smile Rachel couldn't see had to be a smirk. ''Four limbs and a tail. We dropped the tail, but the human form is perfectly designed for a fish.''

Rachel switched her off.

The hillside trees had extensive root systems that gripped rock like a strong man's fist, and low, almost conical trunks. On each tree the tip of the trunk sprouted a single huge leaf, a flapping flag, orange or chrome yellow and ragged at the end. All pennants and no armies. Some of the flags were being torn apart by the air blast from the ground-effect vehicles. Perhaps that was how they spread their seeds, Rachel thought. Like tapeworms. Ask Grace? She'd had enough of Grace, and she'd probably have to start with an apology . . .

The day brightened as if clouds had passed from before the sun.

The slopes were easing off into foothills now. Gusts of wind turned some of the flapping pennants into clouds of confetti. It was easier to go through the papery storms than to steer around. Rachel used one hand as a visor; the day had turned quite bright. Was she carrying dark glasses? Of course, the goggles—

It was a flare!

She kept her eyes resolutely lowered until she'd pulled the red cups over her eyes and adjusted them. Then she turned to look. The suns were behind her left shoulder, and one was nearly lost in the white glare of the other.

Bronze Legs was asleep in a reclined passenger chair in the trailing crawler. It was like sleeping aboard a boat at anchor . . . but the sudden glare woke him instantly.

Going downhill, the mobile power plant rode between the two crawlers, for greater safety. The angle of descent hadn't seriously hampered the ponderous makeshift vehicle. But all bets were off now. *Flare!*

The fuxes were still on the raft. They could be hurt if they tumbled off at this speed, but their every instinct must be telling them to get off and *dig*. Bronze Legs flattened his nose against the windscreen. Charles "Hairy" McBundy, fighting to slow the power plant and raft, wouldn't have attention to spare; and there *had* to be a place to stop. Someplace close, someplace flat, dirt rather than rock, and damn quick! There, to the left? Not quite flat, and it ended short, in a cliff. Tough. Bronze Legs hit the intercom button and screamed, "Hard left, Hairy, and when you stop, stop fast!"

Hairy was ahead of him. Vents had already opened in the air cushion skirts of raft and power plant. Robbed of thrust through the forward vents, the vehicles surged left and forward. Bronze Legs' teeth ground against each other. One silver parasol had opened on the raft, probably Harvester's, and five sharp fux faces were under it. Their tails thrashed with their agitation.

Grace brought the crawler around to follow. Left and forward, too fast, like the power plant. Hairy was on the ledge now. He cut his air cushion all at once. The power plant dropped. Its skirt screamed against rock, then dirt, then, at the edge of the drop, quit. The fuxes boiled off the raft, raised parasols, and began digging.

The crawler vibrated sickeningly as Grace cut the air cushion.

She was wearing her ruby goggles. So was Bronze Legs; he must have donned them without help from his conscious mind. He glanced again at the fuxes and saw only silver disks and a fog of brown dirt. The other crawler had stopped on the slant.

Windstorm's howler sat tilted, but not rolling. Windstorm herself was sprinting uphill. Good enough. She should be inside, in one of the crawlers. Strange things could emerge in flare time. Where was the other howler pilot?

Far downslope and losing ground. Too far to climb back in any reasonable time. That was Rachel, the rammer, wasn't it? With a little skill she could turn the howler and use the larger rear vents to bring her back; but she wasn't showing that skill. She seemed to be trying to back up. Not good at all.

"Grace? Can we take the crawler down to her?"

"We may have to try. Try the intercom first, dear. See if you can talk her back up."

Bronze Legs tried. "Her intercom's off."

"Off? Really? The little idiot—"

"And she's not about to notice the little light. Wait, here she comes." Rachel's howler lifted on emergency power, hovered, then started uphill.

Grace said, "She may have trouble landing."

Then Bronze Legs saw what was happening around them.

To Rachel it seemed that everyone was in panic. Far above her, both crawlers and the power plant had come to a screeching halt. Tough, competent Windstorm had abandoned her own vehicle and was fleeing in terror from nothing visible. The fuxes, the native Medeans, were nowhere in sight. Could they *all* know something Rachel didn't?

She was having her own problems. The damned obsolete sluggish howler refused to back up; it coasted slowly, frictionlessly downhill, farther and farther from safety. To hell with that. She flipped the override.

The howler went up. Rachel leaned far back, and the howler tilted with her, staying low, following the upward curve of terrain. If the power quit early she wanted some chance to land. But the howler purred nicely uphill, faster now, while Rachel concentrated on her balance. She was marginally aware that the gay orange pennants had all turned to dead black crepe, and that certain round white boulders were cracking, crumbling.

But when things emerged from the boulders, she screamed.

All in an instant the mountains were acrawl with a thousand monsters. Their skins were shiny white. Their eyes were mere slits in heads that were mostly teeth. As Rachel rose toward the precarious safety of the crawlers, the creatures chose their target and converged. They ran with bodies low, tails high, legs an invisible blur. In seconds that meager flat place where the crawlers rested was covered with rock demons.

No safety there.

She flew over the crawlers, glimpsed peering faces behind the windscreens, and kept going. The boulders had been rare near the crest, and the rock demons weren't there yet. Neither was Rachel, of course. She'd get as far as possible before the howler quit. And then what?

She flipped on the headlights and the searchlight too. The rock demons throve in flare time, but even they might fear too much flare sunlight. It was worth a try.

The mountain's rock face grew steeper, steeper. No place to land, unless she could reach the crest. The fans howled.

Here was the ridge, coming level. Rachel cursed venomously. The crest was carpeted in pink, sticky cotton candy. Its proprietors had withdrawn into huge snail shells.

The howl of the fans dropped from contralto toward bass.

Pale six-legged monsters, searching for meat on bare rock, turned big heads to squint as Rachel sank low. They blurred into motion.

The crawler coasted just above the pink froth, riding the ground effect now, not really flying. Strange corpses and strange skeletons were marooned in that sea. The wind from the fans was full of pink froth.

Then she had crossed and was coasting downhill, and it was already too late to land. The howler rode centimeters above the rock, too fast and gaining speed. Here the slope was shallower, and she was still in the pass chosen long ago by Medeans monitoring a tractor probe. But the howler rode too low. If she opened a slot to brake, the skirt would scrape rock, the howler would flip over. Find a level spot—

A quick glance back told her she didn't want to stop anyway. A dozen of the rock demons had crossed the cotton candy. Probably used their siblings for stepping stones after *they* got stuck! Rachel held hard to her sanity and concentrated on staying right side up. The things were holding their own in the race. Maybe they were even catching up.

Bronze Legs squeezed between the crates and the roof to reach the crawler's observation bubble. It was big enough for his head and shoulders. He found one of the rock demons with its forelegs wrapped around the bubble, blocking part of his view while it gnawed at the glass.

Rock demons swarmed on the ground. The fuxes couldn't be seen, but a few rock demons lay unnaturally quiet where the fuxholes were, and Bronze Legs saw a spear thrust through the melee. He called down, "Try the searchlights."

"Won't work," Grace answered. She tried it anyway. Other searchlights joined hers, and the thrashing rock demons blazed painfully bright even through goggles. They turned, squinted at the situation, then came all in a quick rush. The bronze spearhead on Harvester's tail stabbed deep into a straggler. The rock demon's blood jetted an incredible distance. It died almost instantly.

If there were live fuxes under the somewhat tattered silver parasols, they were safe now. All the rock demons were swarming around the vehicles' searchlights. They *liked* the light.

Grace chortled. ''Tell me you expected *that*!''

''I wouldn't dare. I feel a lot safer now.'' The monsters weren't tearing at the lights; they fought each other for a place in the glare. ''What do they think they're doing?''

''We've seen this kind of reaction before,'' Grace answered. ''Medean life either loves flares or hates them. All the flare-loving forms act like they're programmed to stay out of shadows during flares. Like, in the shadow of a mountain they'd be in just the conditions they aren't designed for. Most of 'em have high blood pressure, too, and terrific reserves of energy. They have to accomplish a lot in the little time a flare lasts. Be born, eat, grow, mate, give birth—''

''Grace, get on the intercom and find out if everyone's still alive. And see if anyone knows which sun flared.''

''Why? What possible difference could it make?''

''Phrixus flares last up to three quarters of an hour. Helle flares don't last as long. We're going to have to wait it out. And see if Rachel called anyone.''

''Right.''

Bronze Legs half-listened to the intercom conversation. Along the heatward slopes of the mountains the black flags flew in triumph, growing longer almost as Bronze Legs watched, making sugar while the sun flared. The rock demons milling in the searchlight beams were now hungry enough to be attacking each other in earnest. A vastly larger number of rock demons had deserted the mountainsides entirely, had swarmed straight down to the shoreline. The waves were awash with sea monsters of all sizes; the rock demons were wading out to get them.

Grace called up to him. ''Rachel didn't call anyone. Lightning says she made it over the crest.''

''Good.''

''What do you think she'll do?''

''Nobody knows her very well. Hmm . . . She won't land in the cotton candy. She probably could, because those snails are probably hiding in their shells. Right?''

''They wouldn't have shells otherwise.''

''But she won't. It'd be too messy. She'll stop on the coldward slope, or beyond, anywhere it's safe to wait it out. If there is anywhere. Do you think she'll find anywhere safe?''

''She won't know what's safe. She won't find anyplace that isn't swarming with *something*, not this far to heatward. The farther you look to heatward, the more ferocious the competition gets.''

''Then she'll keep going. If she doesn't wreck herself, she'll go straight back to Touchdown City. Let's see, *Morven*'s on the other side of the planet now. Say it'll be up in an hour, and we'll let them know what's happening. That way we'll know she's safe almost as soon as she does. Grace, you don't think she'd try to rejoin us?''

''She can't get lost, and she can't stop, and Touchdown's visible from fifty miles away. She'll just head home. Okay . . .'' There was a funny edge of doubt in Grace's voice. She stabbed at an intercom button. ''Lightning? Me. You watched Rachel go over the crest, right? Did she have her headlights on?''

Bronze Legs was wondering just how teed off the rammers would be if Rachel was dead. It took him a moment to see the implications of what Grace was saying.

''The searchlight too? All right, Lightning. The long range sender is on your roof. I want it ready to send a message to *Morven* by the time *Morven* rises, which will be to south of coldward in about an hour. . . . No, don't go out yet. The way the beasts are running around they should die of heat stroke pretty quick. When they fall off the roof, you go.''

The rock demons followed Rachel twelve kilometers downslope before anything distracted them.

The howler was riding higher now, but Rachel wasn't out of trouble. The emergency override locked the vents closed. If she turned it off the power would drop, and so would the howler. She was steering with her weight alone. Her speed would last as long as she was going down. She had almost run out of mountain. The slope leveled off as it approached the river.

The vicious pegasus-type birds had disappeared. The rolling mountainsides covered with feathery wheat were now covered with stubble, stubble with a hint of motion in it, dark flecks that showed and were gone. Millions of mice, maybe?

Whatever: they were meat. The demons scattered in twelve directions across the stubble, their big heads snapping, snapping. Rachel leaned forward across her windscreen to get more speed. Behind her, three rock demons converged on a golden Roman shield . . . on a mock-turtle that had been hidden by feather-wheat and was now quite visible and helpless. The demons turned it over and ripped it apart and ate and moved on.

The howler slid across the shore and onto flowing water.

Each patch of scarlet scum had sprouted a great green blossom. Rachel steered between the stalks by body english. She was losing speed, but the shore was well behind her now.

And all twelve rock demons zipped downhill across the stubble and into the water. Rachel held her breath. Could they *swim*? They were under water, drinking or dispersing heat or both. Now they arched upward to reach the air.

The howler coasted to a stop in midstream.

Rachel nerved herself to switch off the override. The howler dropped, and hovered in a dimple of water, churning a fine mist that rapidly left Rachel dripping wet. She waited. Come what may, at least the batteries were recharging. Give her time and she'd have a howler that could steer, and fly.

The heatward shore was black with a million mouse-sized beasties. They'd cleaned the field of feather-wheat; but what did they think they were doing now? Watching Rachel? The rock demons noticed. They waded clumsily out of the water and, once on land, blurred into motion. The shore churned with six-legged white marauders and tiny black prey.

It seemed the fates had given Rachel a break. The water seemed quite empty but for the scarlet scum and its huge blossoms. No telling what might be hugging the bottom while the flare passed. Rachel could wait too. The coldward shore looked safe enough . . . though it had changed. Before the flare, it had been one continuous carpet of chrome yellow bushes. The bushes were still there, but topped now with a continuous sheet of silver blossoms. The clouds of insects swarmed still, though they might be different insects.

Upstream, something was walking toward her on stilts. It came at its own good time, stopping frequently. Rachel kept her eye on it while she tried the intercom.

She got static on all bands. Mountains blocked her from the expedition; other mountains blocked her from Touchdown City. The one sender that could reach *Morven* in orbit was on a crawler. Dammit. She never noticed the glowing pinpoint that meant Bronze Legs had called. It was too dim.

Onshore, two of the rock demons were mating head-to-tail.

The thing upstream seemed to be a great silver Daddy-long-legs. Its legs were slender and almost long enough to bridge the river; its torso proportionately tiny. It paused every so often to reach deep into the water with the thumbless hands on its front legs. The hands were stubby, armored in chitin, startlingly quick. They dipped, they rose at once with something that struggled, they conveyed the prey to its mouth. Its head was wide and flat, like a clam with bulging eyes. It stepped delicately downstream, with all the time in the world . . . and it was bigger than Rachel had realized, and *faster*.

So much for her rest break. She opened the rear vent. The howler slid across the river and onto shore, and stopped, nudging the bushes.

The Daddy-long-legs was following her. Ten of the dozen rock demons were wading across. As the bottom dipped the six-legged beasts rose to balance on four legs, then two. As bipeds they were impressively stable. Maybe their tails trailed in the mud bottom to serve as anchors. And the mice were coming too. Thousands of them, swimming in a black carpet among the patches of scum.

Rachel used the override for fifteen seconds. It was enough to put her above the silver-topped bushes. The lily-pad–shaped silver blossoms bowed beneath the air blast, but the ground effect held her. She wasn't making any great speed. Bugs swarmed around her. Sticky filaments shot from between the wide silver lily pads, and sometimes found bugs, and sometimes struck the fans or the ground-effect skirt.

She looked for the place that had been cleared for a fux encampment. Deadeye would be there, a feisty male biped guarding his nest, if Deadeye still lived. She couldn't find the gap in the bushes. It struck her that that was good luck for Deadeye, considering what was following her.

But she was lonely, and scared.

The Daddy-long-legs stepped delicately among the bushes. Bushes rustled to show where ten rock demons streaked after her, veering to snatch a meal from whatever was under the blossoms, then resuming course. Of the plant-eating not-mice there was no sign, except that here and there a bush had collapsed behind her.

But they were all falling behind as the fuel cells poured power into the howler's batteries.

Rachel oriented herself by Argo and the Jet Stream and headed south and coldward. She was very tired. The land was darkening, reddening . . . and it came to her that the flare was dying.

The flare was dying. The goggles let Bronze Legs look directly at the suns, now, to see the red arc enclosing the bright point on Helle. A bubble of hellfire was rising, cooling, expanding into the vacuum above the lesser hell of a red dwarf star.

There were six-legged rock demons all around them, and a few on the roofs. All were dead, from heat stroke or dehydration. A far larger number were gathering all along the Ring Sea shore. Now they swarmed uphill in a wave of silver. They paired off as they came, and stopped by twos in the rocks to mate.

The diminished wave swept around the expedition and petered out. Now the mountains were covered with writhing forms: an impressive sight. ''They make the beast with twelve legs,'' Bronze Legs said. ''Look at the size of those bellies! Hey, Grace, aren't the beasts themselves bigger than they were?''

''They have to be. They've got to form those eggs. Dammit, don't distract me.''

The intercom lit. Grace wasn't about to notice anything so mundane. The paired rock demons were growing quiet, but they were still linked head to tail. Bronze Legs opened the intercom.

Lightning's voice said, ''I've got Duty Officer Toffler aboard *Morven*.''

''Okay. Toffler, this is Miller. We've got an emergency.''

''Sorry to hear it.'' The male voice sounded sleepy. ''What can we do about it?''

"You'll have to call Touchdown City. Can you patch me through, or shall I record a message?"

"Let's check . . ." The voice went away. Bronze Legs watched a nearby pair of rock demons crawling away from each other. The thick torsos seemed different. A belly swelling that had extended the length of the torso was now a prominent swelling between the middle and hind legs. It was happening fast. The beasts seemed gaunt, all bone and skin, except for the great spherical swelling. With fore and middle legs they scratched at the earth, digging, digging.

"Miller, you'd better record. By the time we got their attention they'd be over the horizon. We'll have them in another hour."

"Good—"

"But I don't see how they can help you either. Listen, Miller, is there something we can do with an interstellar message laser? At this range we can melt a mountain or boil a lake, and be accurate to—"

"Dammit, Toffler, *we're* not in trouble! Touchdown City's in trouble, and they don't know it yet!"

"Oh? Okay, set to record."

"To Mayor Curly Jackson, Touchdown City. We've weathered the flare. We don't know if the fuxes survived yet. The rammer, Rachel Subramaniam, is on her way to you on a howler. She has no reason to think she's dangerous, but she is. By the time you spot her you'd be too late to stop her. If you don't move damn quick, the human colony on Medea could be dead within the year. You'll need every vehicle you can get your hands on . . ."

The expedition had crossed a great bay of the Ring Sea in twelve hours. Rachel could cross it in three; but she'd be rid of what followed her moments after she left shore. She had heard Lightning mention the parasitic fungus that floated on this arm of the Ring Sea, that was deadly to fuxes and any Medean life . . . unless the flare had burned it away.

The flare was long over. She rode through the usual red-lit landscape, in a circle of the white light from headlights, tailights, searchlight. She hungered and thirsted for the light of farming lamps, the color of Sol, of ship's sunlights; the sign that she had come at last to Touchdown City.

But she hungered more for the fungus that would kill the rock demons and the Daddy-long-legs. She hated them for their persistence, their monstrous shapes, their lust for her flesh. She hated them for being themselves! Let them rot, slow or quick. Then three hours to cross the bay, half an hour more to find and navigate that rubble-strewn pass, and downhill toward bluewhite light.

That was the shoreline ahead.

Ominously blood-colored beasts milled there. One by one they turned toward the howler.

Rachel cursed horribly and without imagination. She had seen these things before. The expedition's searchlights had pinned a tremendous thousand-legged worm, and these things had been born from its flesh. They were dog-sized, tail-less quadrupeds. Flare time must have caught a lot of the great myriapods, brought vast populations of parasites to life, for this many to be still active this long after the flare.

More than active. They leapt like fleas . . . toward Rachel. She turned to heatward. Weak as she felt now, *one* could knock her out of the saddle.

Her entourage turned with her. Two more rock demons had dropped out. Eight followed, and the great spider, and a loyal population of proto-mice, exposed now that the bushes had ended. And hordes of insects. Rachel's reason told her that she was taking this all too personally. But what did they *see* in her? She wasn't that much meat, and the spider wasn't that hungry. It reached down now and then to pluck a proto-mouse, and once it plucked up a rock demon, with equal nonchalance. The demon raved and snapped and died within the spider's clamshell mouth, but it clawed out an eye, too.

And the demons had the proto-mice for food, but they had to streak down to the water every so often to cool off, and fight their way back through the blood-red quadrupeds, eating what they killed. The mice had fed well on the yellow bushes, and who knew about the tiny might-be-insects? *What did they all want with Rachel?*

After a couple of hours the shore curved south, and now it was white tinged with other colors: a continuous crust of salt. Rachel's climate suit worked well, but her face and hands were hot. The wind was hot with Argo-heat and the heat of a recent flare. The Daddy-long-legs had solved its heat problem. It waded offshore, out of reach of the red parasites, pacing her.

It was five hours before the shore turned sharply to coldward. Rachel turned with it, staying well back from shore, where blood-colored quadrupeds still prowled. She worried now about whether she could find the pass. There would be black, tightly curled ground cover, and trees foliated in gray hair with a spoon-shaped silhouette; and sharp-edged young mountains to the south. But she felt stupid with fatigue, and she had never adjusted to the light and never would: dull red from Argo, pink from two red dwarf suns nearing sunset.

More hours passed. She saw fewer of the red parasites. Once she caught the Daddy-long-legs with another rock demon in its clamshell jaws. The hexapod's own teeth tore at the side of the spider's face . . . the side that was already blind. Flare-loving forms used themselves up fast. Those trees . . .

Rachel swung her searchlight around. The ground cover, the "black man's hair", was gone. A black fog of insects swarmed over bare dirt. But the trees were hairy, with a spoon-shaped silhouette. How far had those trees spread on Medea? She could be in the wrong place . . .

She turned left, uphill.

There were low mountains ahead, young mountains, all sharp edges. A kilometer short, Rachel turned to parallel them. The pass had been so narrow. She could go right past it. She slowed down, then, impatient, speeded up again. Narrow it had been, but straight. Perhaps she would see farming lamps shining through it. She noticed clouds forming, and began cursing to drive away thoughts of rain.

When the light came it was more than a glimmer.

She saw a sun, a white sun, a *real* sun, shining against the mountains. As if flare time had come again! But Phrixus and Helle were pink dots sinking in the west. She swerved toward the glare. The rising ground slowed her, and she remembered the spider plodding patiently behind her; she didn't turn to look.

The glare grew terribly bright. She slowed further, puzzled and frightened. She pulled the goggles up over her eyes. That was better; but still she saw nothing but that almighty glare at the end of a bare rock pass.

She rode into the pass, into the glare, into a grounded sun.

Her eyes adjusted . . .

The rock walls were lined with vehicles: flyers, tractor probes, trucks, crawlers converted to firefighting and ambulance work, anything that could move on its own was there, and each was piled with farming lamps and batteries, and all the farming lamps were on. An aisle had been left between them. Rachel coasted down the aisle. She thought she could make out man-shaped shadows in the red darkness beyond.

They were human. By the pale mane around his head she recognized Mayor Curly Jackson.

Finally, finally, she slowed the howler, let it sink to the ground, and stepped off. Human shapes came toward her. One was Mayor Curly. He took her arm, and his grip drove pain even through the fog of fatigue. ''You vicious little idiot,'' he said.

She blinked.

He snarled and dropped her arm and turned to face the pass. Half the population of Touchdown City stood looking down the aisle of light, ignoring Rachel . . . pointedly. She didn't try to shoulder between them. She climbed into the howler's saddle to see.

They were there: half a dozen rock demons grouped beneath the long legs of the spider; a black carpet of proto-mice; all embedded in a cloud of bright motes, insects. The monsters strolled up the aisle of light, and the watching men backed way. It wasn't necessary. Where the light stopped, Rachel's entourage stopped too.

Mayor Curly turned. ''Did it *once* occur to you that something might be following your lights? Your *flare-colored* lights? You went through half a dozen domains, and every one had its own predators and its own plant-eaters, and you brought them all *here,* you gutless moron! How many kinds of insects are there in that swarm? How many of them would eat our crops down to the ground before it poisoned them? Those little black things on the ground, they're plant-eaters too, aren't they? All flare-loving forms, and you brought them all here to *breed*! The next time a flare goes off would have been the last time any Medean human being had anything to eat! *You'd* be safe, of course. All you'd have to do is fly on to another star . . .''

The only way a human being can turn off her ears is to turn off her mind. Rachel didn't know whether she fainted or not. Probably she was led away rather than carried. Her next memory began some time later, beneath the light of home, with the sounds and the smells of home around her, strapped down in free fall aboard the web ramship *Morven.*

On the curve of the wall the mobile power plant and one of the crawlers had finally left the realms of crusted salt. They ran over baked dirt now. The howler was moored in the center of the ground-effect raft, surrounded by piles of crates. It would be used again only by someone willing to wear a spacesuit. The four remaining fuxes were in the crawlers. Argo was out of camera range, nearly overhead. The view shifted and dipped with the motion of the trailing crawler.

``No, the beasts didn't actually do any harm. We did more damage to ourselves,'' Mayor Curly said. He wasn't looking at Captain Borg. He was watching the holo wall. A cup of coffee cooled in his hand. ``We moved every single farming lamp out of the croplands and set them all going in the pass, right? And the flare-loving life forms just stayed there till they died. They aren't really built to take more than a couple of hours of flare time, what they'd get if both suns flared at once, and they aren't built to walk away from flarelight either. Maybe some of the insects bred. Maybe the big forms were carrying seeds and insect eggs. We know the six-legged types tried to breed as soon as we turned off the lamps, but they weren't in shape for it by then. It doesn't matter now. I suppose I should . . .''

He turned and looked at her. ``In fact, I do thank you most sincerely for melting that pass down to lava. There can't be anything living in it now.''

``So you came out of it with no damage.''

``Not really. The locusts hurt us. We moved the farming lamps in a hurry, but we took our own good time getting them back in place. That was a mistake. Some flare-hating bugs were just waiting to taste our corn.''

``Too bad.''

``And a nest of B-70s killed two children in the oak grove.''

Captain Borg's mind must have been elsewhere. ``You really reamed Rachel out.''

``I did,'' Curly said, without satisfaction and without apology.

"She was almost catatonic. We had to take her back up to *Morven* before she'd talk to anyone. Curly, is there any way to convince her she didn't make a prize idiot of herself?"

"At a guess I'd say no. Why would anyone want to?"

Captain Borg was using her voice of command now. "I dislike sounding childish, especially to you, Curly, but baby talk may be my best option. The problem is that Rachel didn't have any fun on Medea."

"You're breaking my heart."

"She won't even talk about coming down. She didn't like Medea. She didn't like the light, or the animals, or the way the fuxes bred. Too bloody. She went through thirty-odd hours of hell with your power plant expedition, and came back tired to death and being chased by things out of nightmare, and when she finally got to safety you called her a dangerous incompetent idiot and made her believe it. She didn't even get laid on Medea—"

"What?"

"Never mind, it's trivial. Or maybe it's absolutely crucial, but *skip* it. Curly, I have sampled the official memory tape of Medea, the one we would have tried to peddle when we got back into the trade circuit—"

Curly's eyes got big. "O-o-oh shit!"

"It comes to you, does it? That tape was an ugly experience. It's unpleasant, and uncomfortable, and humiliating, and exhausting, and scary, and there's no sex. That's Rachel's view of Medea, and there *isn't* any other, and *nobody's* going to enjoy it."

Curly had paled. "What do we do? Put Rachel's equipment on somebody else?"

"I wouldn't wear it. No rammer is really manic about her privacy, but there are limits. What about a Medean?"

"Who?"

"Don't you have any compulsive exhibitionists?"

Curly shook his head. "I'll ask around, but . . . no, maybe I won't. Doesn't it tell you something, that she couldn't get screwed? What man could go with a woman, knowing she'll be peddling the memory of it to millions of strangers? Yuk."

The crawlers had stopped. Human shapes stepped outside, wearing skintight pressure suits and big transparent bubbles over their heads. They moved around to the ground-effect raft and began opening crates.

"It's no good. Curly, it's not easy to find people to make memory tapes. For a skill tape you need a genuine expert with twenty or thirty years' experience behind him, plus a sharp-edged imagination and a one-track mind and no sense of privacy. And Rachel's a tourist. She's got all of that, and she can learn new skills at the drop of a hat. She's very reactive, very emotive."

"And she very nearly wiped us out."

"She'll be making tapes till she dies. And every time something reminds her of Medea, her entire audience is going to know just what she thinks of the planet."

"What'll happen to us?"

"Oh . . . we could be worried over nothing. I've seen fads before. This whole memory tape thing could be ancient history by the time we get back to civilization."

Civilization? As opposed to what? Curly knew the answer to that one. He went back to watching the wall.

"And even if it's not . . . I'll be back. I'll bring another walking memory like Rachel, but more flexible. Okay?"

"How long?"

"One circuit, then back to Medea."

Sixty to seventy earthyears. "Good," said Curly, because there was certainly no way to talk her into any shorter journey. He watched men in silver suits setting up the frames for the solar mirrors. There was not even wind in the Hot End, and apparently no life at all. They had worried about that. But Curly saw nothing that could threaten Touchdown City's power supply for hundreds of years to come.

If Medea was to become a backwash of civilization, a land of peasants, then it was good that the farmlands were safe. Curly turned to Janice Borg to say so. But the rammer's eyes were seeing nothing on Medea, and her mind was already approaching Horvendile.

WITH VIRGIL ODDUM AT THE EAST POLE

Harlan Ellison

Dedicated to the genius of Simon Rodia

The day he crawled out of the dead cold Icelands, the glaciers creeping down the great cliff were sea-green: endless rivers of tinted, faceted emeralds lit from within. Memories of crippled chances shone in the ice. That was a day, and I remember this clearly, during which the purple sky of Hotlands was filled with the downdrifting balloon spores that had died rushing through the beams of the UV lamps in the peanut fields of the silver crescent. That was a day—remembering clearly—with Argo squatting on the horizon of Hotlands, an enormous inverted tureen of ruby glass.

He crawled toward me and the ancient fux I called Amos the Wise; crawled, literally crawled, up the land-bridge of Westspit onto Meditation Island. Through the slush and sludge and amber mud of the Terminator's largest island.

His heat-envelope was filthy and already cracking, and he tore open the velcro mouthflap without regard for saving the garment as he crawled toward a rotting clump of spillweed.

When I realized that he intended to *eat* it, I moved to him quickly and crouched in front of him so he couldn't get to it.

"I wouldn't put that in your mouth," I said. "It'll kill you."

He didn't say anything, but he looked up at me from down there on his hands and knees with an expression that said it all. He was starving, and if I didn't come up with some immediate alternative to the spillweed, he was going to eat it anyhow, even if it killed him.

This was only one hundred and nineteen years after we had brought the wonders of the human race to Medea, and though I was serving a term of penitence on Meditation Island, I wasn't so sure I wanted to make friends with another human being. I was having a hard enough time just communicating with fuxes. I certainly didn't want to take charge of his life . . . even in as small a way as being responsible for saving it.

Funny the things that flash through your mind. I remember at that moment, with him looking at me so desperately, recalling a cartoon I'd once seen: it was one of those standard thirsty-man-crawling-out-of-the-desert cartoons, with a long line of crawl-marks stretching to the horizon behind an emaciated, bearded wanderer. And in the foreground is a man on a horse, looking down at this poor dying devil with one clawed hand lifted in a begging gesture, and the guy on the horse is smiling and saying to the thirsty man, "Peanut butter sandwich?"

I didn't think he'd find it too funny.

So I pulled up the spillweed, so he wouldn't go for it before I got back, and I trotted over to my wickyup and got him a ball of peanut cheese and a nip-off bulb of water, and came back and helped him sit up to eat.

It took him a while, and of course we were covered with pink and white spores by the time he finished. The smell was awful.

I helped him to his feet. Pretty unsteady. And he leaned on me walking back to the wickyup. I laid him down on my air-mattress and he closed his eyes and fell asleep immediately. Maybe he fainted, I don't know.

His name was Virgil Oddum; but I didn't know that, either, at the time.

I didn't ever know much about him. Not then, not later, not even now. It's funny how everybody knows *what* he did, but not why he did it, or even who he was; and until recently, not so much as his name, nothing.

In a way, I really resent it. The only reason anybody knows me is because I knew him, Virgil Oddum. But they don't care about me or what I was going through, just him, because of what he did. My name is Pogue. William Ronald Pogue, like *rogue;* and I'm important, too. You should know names.

Jason was chasing Theseus through the twilight sky directly over the Terminator when he woke up. The clouds of dead balloon spores had passed over and the sky was amber again, with bands of color washing across the bulk of Argo. I was trying to talk with Amos the Wise.

I was usually trying to talk with Amos the Wise.

The xenoanthropologists at the main station at Perdue Farm in the silver crescent call communication with the fuxes *ekstasis*—literally, "to stand outside oneself." A kind of enriched empathy that conveys concepts and emotional sets, but nothing like words or pictures. I would sit and stare at one of the fuxes, and he would crouch there on his hindquarters and stare back at me; and we'd both fill up with what the other was thinking. Sort of. More or less overcome with vague feelings, general tones of emotion . . . memories of when the fux had been a hunter; when he had had the extra hindquarters he'd dropped when he was female; the vision of a kilometer-high tidal wave once seen near the Seven Pillars on the Ring; chasing females and endlessly mating. It was all there, every moment of what was a long life for a fux: fifteen Medean years.

But it was all flat. Like a drama done with enormous expertise and no soul. The arrangement of thoughts was random, without continuity, without flow. There was no color, no interpretation, no sense of what it all meant for the dromids.

It was artless and graceless; it was merely data.

And so trying to ''talk'' to Amos was like trying to get a computer to create original, deeply meaningful poetry. Sometimes I had the feeling he had been ''assigned'' to me, to humor me; to keep me busy.

At the moment the man came out of my wickyup, I was trying to get Amos to codify the visual nature of the fuxes' religious relationship to Castor C, the binary star that Amos and his race thought of as Maternal Grandfather and Paternal Grandfather. For the human colony they were Phrixus and Helle.

I was trying to get Amos to understand flow and the emotional load in changing colors when the double shadow fell between us and I looked up to see the man standing behind me. At the same moment I felt a lessening of the ekstasis between the fux and me. As though some other receiving station was leaching off power.

The man stood there, unsteadily, weaving and trying to keep his balance, staring at Amos. The fux was staring back. They were communicating, but what was passing between them I didn't know. Then Amos got up and walked away, with that liquid rolling gait old male fuxes affect after they've dropped their hindquarters. I got up with some difficulty: since coming to Medea I'd developed mild arthritis in my knees and sitting cross-legged stiffened me.

As I stood up, he started to fall over, still too weak from crawling out of Icelands. He fell into my arms, and I confess my first thought was annoyance because now I *knew* he'd be another thing I'd have to worry about.

''Hey, hey,'' I said, ''take it easy.''

I helped him to the wickyup, and put him on his back on the air-mattress. ''Listen, fellah,'' I said, ''I don't want to be cold about this, but I'm out here all alone, paying my time. I don't get another shipment of rations for about four months and I can't keep you here.''

He didn't say anything. Just stared at me.

''Who the hell are you? Where'd you come from?''

Watching me. I used to be able to read expression very accurately. Watching me, with hatred.

I didn't even know him. He didn't have any idea what was what, why I was out there on Meditation Island; there wasn't any reason he should hate me.

''How'd you get here?''

Watching. Not a word out of him.

''Listen, mister: here's the long and short of it. There isn't any way I can get in touch with anybody to come and get you. And I can't keep you here because there just isn't enough ration. And I'm not going to let you stay here and starve in front of me, because after a while you're sure as hell going to go for my food and I'm going to fight you for it, and one of us is going to get killed. And I am not about to have that kind of a situation, understand? Now I know this is chill, but you've got to go. Take a few days, get some strength. If you hike straight across Eastspit and keep going through Hotlands, you might get spotted by someone out spraying the fields. I doubt it, but maybe.''

Not a sound. Just watching me and hating me.

''Where'd you come from? Not out there in Icelands. Nothing can live out there. It's minus thirty Celsius. Out there.'' Silence. ''Just glaciers. Out there.''

Silence. I felt that uncontrollable anger rising in me.

''Look, jamook, I'm not having this. Understand me? I'm just not having any of it. You've got to go. I don't give a damn if you're the Count of Monte Crespo or the lost Dauphin of Threx: you're getting the hell out of here as soon as you can crawl.'' He stared up at me and I wanted to hit the bastard as hard as I could. I had to control myself. This was the kind of thing that had driven me to Meditation Island.

Instead, I squatted there watching him for a long time. He never blinked. Just watched me. Finally, I said, very softly, ''What'd you say to the fux?''

A double shadow fell through the door and I looked up. It was Amos the Wise. He'd peeled back the entrance flap with his tail because his hands were full. Impaled on the three long, sinewy fingers of each hand were six freshly-caught dartfish. He stood there in the doorway, bloody light from the sky forming a corona that lit his blue, furry shape; and he extended the skewered fish.

I'd been six months on Meditation Island. Every day of that time I'd tried to spear a dartfish. Flashfreeze and peanut cheese and box-ration, they can pall on you pretty fast. You want to gag at the sight of silvr wrap. I'd wanted fresh food. Every day for six months I'd tried to catch something live. They were too fast. That's why they weren't called slowfish. The fuxes had watched me. Not one had ever moved to show me how they did it. Now this old neuter Amos was offering me half a dozen. I knew what the guy had said to him.

''Who the hell are you?'' I was about as skewed as I could be. I wanted to pound him out a little, delete that hateful look on his face, put him in a way so I wouldn't have to care for him. He didn't say a word, just kept looking at me; but the fux came inside the wickyup—first time he'd ever done *that*, damn his slanty eyes!—and he moved around between us, the dartfish extended.

This guy had some kind of *hold* over the aborigine! He didn't say a thing, but the fux knew enough to get between us and insist I take the fish. So I did it, cursing both of them under my breath.

And as I pried off the six dartfish I felt the old fux pull me into a flow with him, and stronger than I'd ever been able to do it when we'd done ekstasis, Amos the Wise let me know that this was a very holy creature, this thing that had crawled out of the Icelands, and I'd better treat him pretty fine, or else. There wasn't even a hint of a picture of what *or else* might be, but it was a strong flow, a *strong* flow.

So I took the fish and put them in the larder, and I let the fux know how grateful I was, and he didn't pay me enough attention to mesmerize a gnat; and the flow was gone; and he was doing ekstasis with my guest lying out as nice and comfy as you please; and then he turned and slid out of the wickyup and was gone.

I sat there through most of the night watching him, and one moment he was staring at me, and the next he was asleep; and I went on through that first night just sitting there looking at him gonked-in like that, where I would have been sleeping if he hadn't showed up. Even asleep he hated me. But he was too weak to stay awake and enjoy it.

So I looked at him, wondering who the hell he was, most of that night. Until I couldn't take it any more, and near to morning I just beat the crap out of him.

They kept bringing food. Not just fish, but plants I'd never seen before, things that grew out there in Hotlands east of us, out there where it always stank like rotting garbage. Some of the plants needed to be cooked, and some of them were delicious just eaten raw. But I knew they'd never have showed me *any* of that if it hadn't been for him.

He never spoke to me, and he never told the fuxes that I'd beaten him the first night he was in camp; and his manner never changed. Oh, I knew he could talk all right, because when he slept he tossed and thrashed and shouted things in his sleep. I never understood any of it; some offworld language. But whatever it was, it made him feel sick to remember it. Even asleep he was in torment.

He was determined to stay. I knew that from the second day. I caught him pilfering stores.

No, that's not accurate. He was doing it openly. I didn't catch him. He was going through the stash in the transport sheds, mostly goods I wouldn't need for a while yet, and items whose functions no longer related to my needs. He had already liberated some of those items when I discovered him burrowing through the stores: the neetskin tent I'd used before building the wickyup from storm-hewn fellner trees; the spare air-mattress; a hologram projector I'd used during the first month to keep me entertained with a selection of laser beads, mostly Nōh plays and conundramas. I'd grown bored with the diversions very quickly: they didn't seem to be a part of my life of penitence. He had commandeered the projector, but not the beads. Everything had been pulled out and stacked.

"What do you think you're doing?" I stood behind him, fists knotted, waiting for him to say something snappy.

He straightened with some difficulty, holding his ribs where I'd kicked him the night before. He turned and looked at me evenly. I was surprised: he didn't seem to hate me as much as he'd let it show the day before. He wasn't afraid of me, though I was larger and had already demonstrated that I could bash him if I wanted to bash him, or leave him alone if I chose to leave him alone. He just stared, waiting for me to get the message.

The message was that he was here for a while.

Like it or not.

"Just stay out of my way," I said. "I don't like you, and that's not going to change. I made a mistake pulling that spillweed, but I won't make any more mistakes. Keep out of my food stores, keep away from me, and don't get between me and the dromids. I've got a job to do, and you interfere . . . I'll weight you down, toss you in, and what the scuttlefish don't chew off is going to wash up at Icebox. You got that?"

I was just shooting off my mouth. And what was worse than my indulging in the same irrational behavior that had already ruined my life, was that he knew I was just making a breeze. He looked at me, waited long enough so I couldn't pretend to have had my dignity scarred, and he went back to searching through the junk. I went off looking for fuxes to interrogate, but they were avoiding us that day.

By that night he'd already set up his own residence.

And the next day Amos delivered two females to me, who unhinged themselves on their eight legs in a manner that was almost sitting. And the old neuter let me know these two—he used an ekstasis image that conveyed *nubile*—would join flow with me in an effort to explain their relationship to Maternal Grandfather. It was the first voluntary act of assistance the tribe had offered in six months.

So I knew my unwelcome guest was paying for his sparse accommodations.

And later that day I found wedged into one of the extensible struts I'd used in building the wickyup, the thorny branch of an emeraldberry bush. It was festooned with fruit. Where the aborigines had found it, out there in that shattered terrain, I don't know. The berries were going bad, but I pulled them off greedily, nicking my hands on the thorns, and squeezed their sea-green juice into my mouth.

So I knew my unwelcome guest was paying for his sparse accommodations.

And we went on that way, with him lurking about and sitting talking to Amos and his tribe for hours on end, and me stumping about trying to play Laird of the Manor and getting almost nowhere trying to impart philosophical concepts to a race of creatures that listened attentively and then gave me the distinct impression that I was retarded because I didn't understand Maternal Grandfather's hungers.

Then one day he was gone. It was early in the crossover season and the hard winds were rising from off the Hotlands. I came out of the wickyup and knew I was alone. But I went to his tent and looked inside. It was empty, as I'd expected it to be. On a rise nearby, two male fuxes and an old neuter were busy patting the ground, and I strolled to them and asked where the other man was. The hunters refused to join flow with me, and continued patting the ground in some sort of ritual. The old fux scratched at his deep blue fur and told me the holy creature had gone off into the Icelands. Again.

I walked to the edge of Westspit and stared off toward the glacial wasteland. It was warmer now, but that was pure desolation out there. I could see faint trails made by his skids, but I wasn't inclined to go after him. If he wanted to kill himself, that was his business.

I felt an irrational sense of loss.

It lasted about thirty seconds; then I smiled; and went back to the old fux and tried to start up a conversation.

Eight days later the man was back.

Now he was starting to scare me.

He'd patched the heat-envelope. It was still cracked and looked on the edge of unserviceability, but he came striding out of the distance with a strong motion, the skids on his boots carrying him boldly forward till he hit the mush. Then he bent and, almost without breaking stride, pulled them off, and kept coming. Straight in toward the base camp, up Westspit. His cowl was thrown back, and he was breathing deeply, not even exerting himself much, his long, horsey face flushed from his journey. He had nearly two weeks' growth of beard and so help me he looked like one of those soldiers of fortune you see smoking clay pipes and swilling up boar piss in the spacer bars around Port Medea. Heroic. An adventurer.

He sloughed in through the mud and the suckholes filled with sargasso, and he walked straight past me to his tent and went inside, and I didn't see him for the rest of the day. But that night, as I sat outside the wickyup, letting the hard wind tell me odor tales of the Hotlands close to Argo at the top of the world, I saw Amos the Wise and two other old dromids come over the rise and down to his tent; and I stared at them until the heroic adventurer came out and squatted with them in a circle.

They didn't move, they didn't gesticulate, they didn't do a goddamned thing, they just joined flow and passed around the impressions like a vonge-coterie passing its dream-pipe.

And the next morning I was wakened by the sound of clattering, and threw on my envelope and came out to see him snapping together the segments of a jerry-rigged sledge of some kind. He'd cannibalized boot skids and tray shelves from the transport sheds and every last one of those lash-up spiders the lading crews use to tighten down cargo. It was an ugly, rickety thing, but it looked as if it would slide across ice once he was out of the mush.

Then it dawned on me he was planning to take all that out there into the Icelands. "Hold it, mister," I said. He didn't stop working. I strode over and gave him a kick in the hip. "I said: hold it!"

With his right hand he reached out, grabbed my left ankle and *lifted*. I half-turned, found myself off the ground, and when I looked up I was two meters away, the breath pulled out of me; on my back. He was still working.

I got up and ran at him. I don't recall seeing him look up, but he must have, otherwise how could he have gauged my trajectory?

When I stopped gasping and spitting out dirt, I tried to turn over and sit up, but there was a foot in my back. I thought it was him, but when the pressure eased and I could look over my shoulder I saw the blue-furred shape of a hunter fux standing there, a spear in his sinewy left hand. It wasn't aimed at me, but it was held away in a direct line that led back to aiming at me. Don't mess with the holy man, that was the message.

An hour later he pulled the sledge with three spiders wrapped around his chest, and dragged it off behind him, down the land-bridge and out into the mush. He was leaning forward, straining to keep the travois from sinking into the porridge till he could hit firmer ice. He was one of those old holograms you see of a coolie in the fields, pulling a plow by straps attached to a leather band around his head.

He went away and I wasn't stupid enough to think he was going for good and all. That was an *empty* sledge.

What would be on it when he came back?

It was a thick, segmented tube a meter and a half long. He'd chipped away most of the ice in which it had lain for twenty years, and I knew what it was, and where it had come from, which was more than I could say about him.

It was a core laser off the downed Daedalus power satellite whose orbit had decayed inexplicably two years after the Northcape Power District had tossed the satellite up. It had been designed to calve into bergs the glaciers that had gotten too close to coastal settlements; and then melt them. It had gone down in the Icelands of Phykos, somewhere between the East Pole and Icebox, almost exactly two decades ago. I'd flown over it when they'd hauled me in from Enrique and the bush pilot decided to give me a little scenic tour. We'd looked down on the wreckage, now part of a complex ice sculpture molded by wind and storm.

And this nameless skujge who'd invaded my privacy had gone out there, somehow chonked loose the beamer—and its power collector, if I was right about the fat package at the end of the tube—and dragged it back who knows how many kilometers . . . for why?

Two hours later I found him down one of the access hatches that led to the base camp's power station, a fusion plant, deuterium source; a tank that had to be replenished every sixteen months: I didn't have a refinery.

He was examining the power beamers that supplied heat and electricity to the camp. I couldn't figure out what he was trying to do, but I got skewed over it and yelled at him to get his carcass out of there before we both froze to death because of his stupidity.

After a while he came up and sealed the hatch, and went off to tinker with his junk laser.

I tried to stay away from him in the weeks that followed. He worked over the laser, stealing bits and pieces of anything nonessential that he could find around the camp. It became obvious that though the lacy solar-collector screens had slowed the Daedalus's fall as they'd been burned off, not even that had saved the beamer from serious damage. I had no idea why he was tinkering with it, but I fantasized that if he could get it working he might go off and not come back.

And that would leave me right where I'd started, alone with creatures who did not paint pictures or sing songs or devise dances or make idols; to whom the concept of art was unknown; who responded to my attempts to communicate on an esthetic level with the stolid indifference of grandchildren forced to humor a batty old aunt.

It was penitence indeed.

Then one day he was finished. He loaded it all on the sledge—the laser, some kind of makeshift energy receiver package he'd mated to the original tube, my hologram projector, and spider straps and harnesses and a strut tripod—and he crawled down into the access hatch and stayed there for an hour. When he came back out he spoke to Amos, who had arrived as if silently summoned, and when he was done talking to him he got into his coolie rig and slowly dragged it all away. I started to follow, just to see where he was going, but Amos stopped me. He stepped in front of me and he had ekstasis with me and I was advised not to annoy the holy man, and not to bother the new connections that had been made in the camp's power source.

None of that was said, of course. It was all vague feelings and imperfect images. Hunches, impressions, thin suggestions, intuitive urgings. But I got the message. I was all alone on Meditation Island, there by sufferance of the dromids. As long as I did not interfere with the holy adventurer who had come out of nowhere to fill me with the rage I'd fled across the stars to escape.

So I turned away from the Icelands, good riddance, and tried to make some sense out of the uselessness of my life. Whoever he had been, I knew he wasn't coming back, and I hated him for making me understand what a waste of time I was.

That night I had a frustrating conversation with a turquoise fux in its female mode. The next day I shaved off my beard and thought about going back.

He came and went eleven times in the next two years. Where and how he lived out there, I never knew. And each time he came back he looked thinner, wearier, but more ecstatic. As if he had found God out there. During the first year the fuxes began making the trek: out there in the shadowed vastness of the Icelands they would travel to see him. They would be gone for days and then return to speak among themselves. I asked Amos what they did when they made their hegira, and he said, through ekstasis, "He must live, is that not so?" To which I responded, "I suppose so," though I wanted to say, "Not necessarily."

He returned once to obtain a new heat-envelope. I'd had supplies dropped in, and they'd sent me a latest model, so I didn't object when he took my old suit.

He returned once for the death ceremony of Amos the Wise, and seemed to be leading the service. I stood there in the circle and said nothing, because no one asked me to contribute.

He returned once to check the fusion plant connections.

But after two years he didn't return again.

And now the dromids were coming from what must have been far distances, to trek across Meditation Island, off the land-bridge, and into the Icelands. By the hundreds and finally thousands they came, passed me, and vanished into the eternal winterland. Until the day a group of them came to me and their leader, whose name was Ben of Old Times, joined with me in the flow and said, "Come with us to the holy man." They'd always stopped me when I tried to go out there.

"Why? Why do you want me to go now? You never wanted me out there before!" I could feel the acid boiling up in my anger, the tightening of my chest muscles, the clenching of my fists. They could burn in Argo before I'd visit that lousy skujge!

Then the old fux did something that astonished me. In three years they had done *nothing* astonishing except bring me food at the man's request. But now the aborigine extended a slim-fingered hand to his right and one of the males, a big hunter with bright blue fur, passed him his spear. Ben of the Old Times pointed it at the ground and, with a very few strokes, *drew two figures in the caked mud at my feet.*

It was a drawing of two humans standing side-by-side, their hands linked. One of them had lines radiating out from his head, and above the figures the dromid drew a circle with comparable lines radiating outward.

It was the first piece of intentional art I had ever seen created by a Medean life-form. The first, as far as I knew, that had ever *been* created by a native. And it had happened as I watched. My heart beat faster. I *had* done it! I had brought the concept of art to at least one of these creatures.

"I'll come with you to see him," I said.

Perhaps my time in purgatory was coming to an end. It was possible I'd bought some measure of redemption.

I checked the fusion plant that beamed energy to my heat-envelope, to keep me from freezing; and I got out my boot skids and Ba'al ice-claw; and I racked the ration dispenser in my pack full of silvr wrap; and I followed them out there. Where I had not been permitted to venture, lest I interfere with their holy man. Well, we'd see who was the more important of us two: a nameless intruder who came and went without ever a thank you, or William Ronald Pogue, the man who brought art to the Medeans!

For the first time in many years I felt light, airy, worthy. I'd sprayed fixative on that pictograph in the mud. It might be the most valuable exhibit in the Pogue Museum of Native Art. I chuckled at my foolishness, and followed the small band of fuxes deeper into the Icelands.

It was close on crossback season, and the winds were getting harder, the storms were getting nastier. Not as impossible as it would be a month hence, but bad enough.

We were beyond the first glacier that could be seen from Meditation Island, the spine of ice cartographers had named the Seurat. Now we were climbing through the NoName Cleft, the fuxes chinking out hand-and-footholds with spears and claws, the Ba'al snarling and chewing pits for my own ascent. Green shadows swam down through the Cleft. One moment we were pulling ourselves up through twilight, and the next we could not see the shape before us. For an hour we lay flat against the ice-face as an hysterical wind raged down the Cleft trying to tear us loose and fling us into the cut below.

The double shadows flickered and danced around us. Then everything went into the red, the wind died, and through now-bloody shadows we reached the crest of the ridge beyond the Seurats.

A long slope lay before us, rolling to a plain of ice and slush pools, very different from the fields of dry ice that lay farther west to the lifeless expanse of Farside. Sunday was rapidly moving into Darkday.

Across the plain vision was impeded by a great wall of frigid fog that rose off the tundra. Vaguely, through the miasma I could see the great glimmering bulk of the Rio de Luz, the immense kilometers-long ice mountain that was the final barrier between the Terminator lands and the frozen nothingness of Farside. The River of Light.

We hurried down the slope, some of the fuxes simply tucking two, four or six of their legs under them and sliding down the expanse to the plain. Twice I fell, rolled, slid on my butt, tried to regain my feet, tumbled again and decided to use my pack as a toboggan. By the time we had gained the plain, it was nearly Darkday and fog had obscured the land. We decided to camp till Dimday, hacked out sleeping pits in the tundra, and buried ourselves.

Overhead the raging aurora drained red and green and purple as I closed my eyes and let the heat of the envelope take me away. What could the ‘‘holy man’’ want from me after all this time?

We came through the curtain of fog, the Rio de Luz scintillating dimly beyond its mask of gray-green vapor. I estimated that we had come more than thirty kilometers from Meditation Island. It was appreciably colder now, and ice-crystals glimmered like rubies and emeralds in the blue fux fur. And, oddly, a kind of breathless anticipation had come over the aborigines. They moved more rapidly, oblivious to the razor winds and the slush pools underfoot. They jostled one another in their need to go toward the River of Light and whatever the man out there needed me to assist with.

It was a long walk, and for much of that time I could see little more of the icewall than its cruel shape rising at least fifteen hundred meters above the tundra. But as the fog thinned, the closer we drew to the base of the ice mountain, the more I had to avert my eyes from what lay ahead: the permanent aurora lit the ice and threw off a coruscating glare that was impossible to bear.

And then the fuxes dashed on ahead and I was left alone, striding across the tundra toward the Rio de Luz.

I came out of the fog.

And I looked up and up at what rose above me, touching the angry sky and stretching as far away as I could see to left and right. It seemed hundreds of kilometers in length, but that was impossible.

I heard myself moaning.

But I could not look away, even if it burned out my eyes.

Lit by the ever-changing curtain of Medea’s sky, the crash and downdripping of a thousand colors that washed the ice in patterns that altered from instant to instant, the Rio de Luz had been transformed. The man had spent three years melting and slicing and sculpting kilometers of living ice—I couldn’t tell how many—into a work of high art.

Horses of liquid blood raced through valleys of silver light. The stars were born and breathed and died in one lacy spire. Shards of amber brilliance shattered against a diamond-faceted icewall through a thousand apertures cut in the facing column. Fairy towers too thin to exist rose from a shadowed hollow and changed color from meter to meter all up their length. Legions of rainbows rushed from peak to peak, like waterfalls of precious gems. Shapes and forms and spaces merged and grew and vanished as the eye was drawn on and on. In a cleft he had formed an intaglio that was black and ominous as the specter of death. But when light hit it suddenly, shattering and spilling down into the bowl beneath, it became a great bird of golden promise. And the sky was there, too. All of it, reflected back and new because it had been pulled down and captured. Argo and the far suns and Phrixus and Helle and Jason and Theseus and memories of suns that had dominated the empty places and were no longer even memories. I had a dream of times past as I stared at one pool of changing colors that bubbled and sang. My heart was filled with feelings I had not known since childhood. And it never stopped. The pinpoints of bright blue flame skittered across the undulating walls of sculpted ice, rushed toward certain destruction in the deeps of a runoff cut, paused momentarily at the brink, then flung themselves into green oblivion. I heard myself moaning and turned away, looking back toward the ridge across the fog and tundra; and I saw nothing, nothing! It was too painful not to see what he had done. I felt my throat tighten with fear of missing a moment of that great pageant unfolding on the ice tapestry. I turned back and it was all new, I was seeing it first and always as I had just minutes before . . . was it minutes . . . how long had I been staring into that dream pool . . . how many years had passed . . . and would I be fortunate enough to spend the remainder of my life just standing there breathing in the rampaging beauty I beheld? I couldn't think, pulled air into my lungs only when I had forgotten to breathe for too long a time.

Then I felt myself being pulled along, and cried out against whatever force had me in its grip, that would deprive me of a second of that towering narcotic.

But I was pulled away, and was brought down to the base of the River of Light, and it was Ben of the Old Times who had me. He forced me to sit, with my back to the mountain, and after a very long time in which I sobbed and fought for air, I was able to understand that I had almost been lost, that the dreamplace had taken me. But I felt no gratitude. My soul ached to rush out and stare up at beauty forever.

The fux flowed with me, and through ekstasis I felt myself ceasing to pitch and yaw. The colors dimmed in the grottos behind my eyes. He held me silently with a powerful flow until I was William Pogue again. Not just an instrument through which the ice mountain sang its song, but Pogue, once again Pogue.

And I looked up, and I saw the fuxes hunkered down around the body of their ''holy man,'' and they were making drawings in the ice with their claws. And I knew it was not I who had brought them to beauty.

He lay face-down on the ice, one hand still touching the laser tube. The hologram projector had been attached with a slipcard computer. Still glowing was an image of the total sculpture. Almost all of it was in red lines, flickering and fading and coming back in with power being fed from base camp; but one small section near the top of an impossibly-angled flying bridge and minaret section was in blue line.

I stared at it for a while. Then Ben said this was the reason I had been brought to that place. The holy man had died before he could complete the dreamplace. And in a rush of flow he showed me where, in the sculpture, they had first understood what beauty was, and what art was, and how they were one with the Grandparents in the sky. Then he created a clear, pure image. It was the man, flying to become one with Argo. It was the stick figure in the mud: it was the uninvited guest with the lines of radiance coming out of his head.

There was a pleading tone in the fux's ekstasis. Do this for us. Do what he did not have the time to do. Make it complete.

I stared at the laser lying there, with its unfinished hologram image blue and red and flickering. It was a bulky, heavy tube, a meter and a half long. And it was still on. He had fallen in the act.

I watched them scratching their first drawings, even the least of them, and I wept within myself; for Pogue who had come as far as he could, only to discover it was not far enough. And I hated him for doing what I could not do. And I knew he would have completed it and then walked off into the emptiness of Farside, to die quickly in the darkness, having done his penance . . . and more.

They stopped scratching, as if Ben had ordered them to pay some belated attention to me. They looked at me with their slanted vulpine eyes now filling with mischief and wonder. I stared back at them. Why should I? Why the hell should I? For what? Not for me, that's certain!

We sat there close and apart, for a long time, as the universe sent its best light to pay homage to the dreamplace.

The body of the penitent lay at my feet.

From time to time I scuffed at the harness that would hold the laser in position for cutting. There was blood on the shoulder straps.

After a while I stood up and lifted the rig. It was much heavier than I'd expected.

Now they come from everywhere to see it. Now they call it Oddum's Tapestry, not the Rio de Luz. Now everyone speaks of the magic. A long time ago he may have caused the death of thousands in another place, but they say that wasn't intentional; what he brought to the Medeans was on purpose. So it's probably right that everyone knows the name Virgil Oddum, and what he created at the East Pole.

But they should know me, too. I was there! I did some of the work.

My name is William Ronald Pogue, and I mattered. I'm old, but I'm important, too. You should know names.

SWANILDA'S SONG

Frederik Pohl

1.

My name is Swanilda Guthrie, and this is the story of how I saved Civilization As We Know It. Hold your applause, folks. It wasn't all that hard, not to mention that Civilization As We Know It may not really be all that worth saving. But I did it. At no small cost to my safety. And my skin.

You might wonder what a nice soprano like me was doing in a situation like that. It was simple, really. I needed to juice up the act, because things hadn't been going right for me. That was a condition with a considerable precedent in my life, all the way back to the time I made my debut. And that was at the age of twelve and a half, in St. Rose of Lima Convent School in Grand Rapids, Michigan, which by coincidence was the exact age, and even the exact day, at which I attained the elevated state of mature and fertile womanhood. Bad scene. An hour before I went on stage I was wrapped in a blanket in the principal's office, with her desk calculator on my stomach, crying my eyes out. I don't know what good I thought the weight would do. It didn't do any good at all. I hurt. I went on hurting all through the Christmas production of *Hansel and Gretel*. This particular story has kind of a happy ending because, to tell you the truth, I was a smash. But to tell you the rest of the truth, with my guts feeling as though somebody was poking around in them with a soldering iron, I didn't care.

So at twelve and a half I was a sensation, with notices in even the Detroit and Chicago papers. At thirty, not so much of a sensation. The fellow I happened to be married to at that time said he sometimes thought my first name was "And", because all the reviews said, "The cast also included This One, That One And Swanilda Guthrie." And later still, at—well, let's not be too despicably mathematical about this. At a certain period some years later, and also some half million cigarettes, maybe a thousand liters of booze and two or three husbands later, when my agent, Stan, told me I had to make a move, my biggest moments had come down to song recitals on college dates at places like State College, Pennsylvania, and Permian Basin, Texas.

It isn't fair, you know. The voice didn't change. Just the rest of me changed. I think I would have had some great career if I had been able to keep on singing Hansel forever, because I was a knockout in the pants parts. I almost sang *Fledermaus* at La Scala once. I would have made it, too, except that right about then was when I began to like to eat. A soprano who is a knockout when she weighs fifty kilos stops looking cute dressed up as a boy when she hits seventy. I couldn't even sing Mimì any more. *Bohème* has that bit in the second act where Rodolfo is supposed to pick me up and carry me off stage. The last time I tried it, in Denver, he dropped me twice in rehearsal. So we worked it out that I would sort of lean on him and we would stagger across the stage together like any taxpayer lugging his drunken wife home to the two A.M. screaming match. But the audience, God damn their hearts, laughed.

Well, that's what happens. There were still parts I could sing. But I never had that deep, raw voice for the Queen of the Night or any of that stuff, not to mention that it's a long time since I had the build to crouch down behind the scenery for forty-five minutes and then burst out with that full-voice scream. And when you come right down to it, Swanilda, face the facts, you never had those Beverly Sills or Montserrat Caballé lungs. A small hall I could fill very nicely. Even truly. But to wake up the college kids in the top balcony at the Met, no, not me, not without screeching.

So when Stan gave me his quarterly excuses for the fact that my next season wasn't going to be exactly a triumph, I wasn't surprised. But then he said, "Swanilda, honey, I want you to hear something."

"Don't you mean you want to show me something, Stan? Like back in your dressing room?"

"No, Swanilda, this is serious. I got a telegram from State College, they don't want you back this year."

"So? There's plenty more like that!"

"Well, no, Swanilda, there aren't. Have you ever heard of Medea?"

"Sure, but it's out of my range, Stan."

"Not the part. The planet."

"Oh. Oh, certainly. There was a TV special on it a while ago."

"They have these creatures that sing there. Let me play you some tapes."

And he did, and while I listened I was trying to remember about this Medea. It had semi-intelligent inhabitants. One kind that looked a little bit like spaniels, another kind that looked sort of like jellyfish. Except that they were full of hydrogen, and they floated in the air.

And—yes, they sang. I hadn't really had any idea how *much* they sang until I listened to Stan's tapes. There seemed to be a dozen or more of them, all singing at once, not exactly in parts but doubling each other and then sometimes doing very peculiar harmonies and counterpoints, a little like Alban Berg or early Stravinsky. It grew on you as you listened.

Stan snapped off the tape and said, "What do you think?"

"It's very *Wozzeck*, Stan. I don't know if I could sing it."

''I don't want you to sing it, honey. I want you to become a musicologist specializing in it. There's a government grant to send somebody out there, and I'm recommending you.''

''Musicologist! That's for some has-been, Stan, not for somebody in the middle of a performing career.''

He reached out and took my hand, and for the first time since I'd known him Stan looked at me not as though I were a percentage or a quickie in the back room, but a living human being.

''Honey,'' he said, ''that's what I've been trying to tell you. You don't have a career any more.''

So I thought it over carefully, and I accepted. It wasn't hard. Stan was telling me true.

Sixty-one years out and sixty-one years back! That was the hard part to get used to. Of course, I wouldn't age a hundred and a quarter years. I wouldn't age at all, or so they promised me. (They didn't tell me what the liquid nitrogen would do to my skin.) And they gave me a contract, officially signed on behalf of the U.S.I.S. of the State Department of the United States of America. Is a contract any good when the person who signs it has been dead a hundred years? I didn't know. But I was willing to take a chance on finding out, because it promised me a tour with my Medean songs, and it mentioned places like l'Opéra and Albert Hall and the Bolshoi. Those are places I had been in before, all right. But never, dear friends, without buying a ticket.

So there I was, on the way to Medea, and Stan surely thirty years dead before I got there.

Born again to a new life!

How thrilling that sounds. How crummy the reality. When they tucked me into my little freezer bottle, ten days off Earth, the last thing I remembered was promising myself that I would take note of every last bit of what it felt like to come alive again in a new world. Well, what it felt like was lousy. Where my hair hadn't snapped off at the roots it was a smelly tangle. My skin was shedding. My eyes wouldn't focus; put me all together, and I was the worst-looking soprano who ever slept her way into a part.

But that wasn't enough for Swanilda. There was more. I smelled, and so did the ship. It had that good old morning-after fug, as though mink had been breeding in it for years.

We were all being waked up at the same time, stumbling around and smelling bad and complaining. The human beings were bad enough. The little Medean creature they called a fux, looked like a sort of a stretched-out spaniel and had just finished getting a degree at Oxford—nice little pooch, I'd tousled his ears, or where his ears ought to be, before we sacked in—anyway, he had forgotten his housebreaking. He lay with his nose between his paws, whining sorrowfully. Oh, we were a jolly crew. But I wasn't really noticing all of that, because there was worse still.

See, what they don't tell you about cryosleep is how it hurts.

The run from Earth to Medea takes sixty-one years. You don't know the time is passing, because you're a liquid-gas corpsicle, frozen and uncaring. Well, that's cool—that's fine, I mean. But some parts of you freeze in ways unlike other parts of you. Nothing big. Nothing life-threatening. But if you happen to have been lazy about brushing, so that the Tooth Fairy got pissed at you and you grew up with a mouth full of dental findings, you wake up with the grandmother of all toothaches. Oh, Jesus, yes. The metal in the fillings contracts with the cold just a little faster than the tooth does. Not much. Just enough to pull away from the cement. So then you come to where you're going and you warm up again, and what happens? Nature abhors a vacuum. Gas has seeped in to fill those little spaces, and now the little pockets of gas are under pressure as the spaces close back. What do they press against? Why, tender old you, that's what they press against, the rawest, openest nerves in your jaw. So the way I woke up was, I woke up screaming in pain.

I wasn't the only one with a toothache. But old Swanilda's a pro at screaming and she can hit those back balconies when she doesn't have to worry about purity of tone. I was the one who got the first shot of novocaine and the first turn in the dentist's chair when Bill Garmer, the podiatrist on contract to one of the colonies who was the closest thing we had to a ship's medic, got his own head cleared up enough to try to help me out. With all the novocaine in the needle, it still hurt so much that he was nearly through before I noticed who he was. "Eh-oh, Ill," I said. My enunciation has always been a strong point. But not with a mouth full of fingers and drains.

Good old Bill didn't even give me a tumble.

That made it complete. Bill was a doctor, and therefore as permanently horny as a gonadal fux, and if he wasn't conscious of me as a sexual being I was in trouble.

Much chastened, I got out of the chair. Now that my jaw had stopped exploding I could think about my skin and hair, not to mention getting something to eat and smoke. A spaceship isn't much good for any of those things. There isn't room for your classy onyx tubs and marble shelves of skin cream. The best I could have was three minutes in a cylindrical tin shower.

Half a kilo of dead skin flakes went slurping down the drain, but I was still a long way from the thing of beauty I aimed at. At least I got out of the coveralls I had worn for sixty-one straight years in the freezer, but what they gave me to replace them was an identical set, dropseat, booties and all. Captain-Pilot Bechmann wouldn't let me get at my own clothes in the storage compartments. Some nonsense about the vacuum of space. And five minutes out of the shower I needed a bath again. The oily, sweaty atmosphere of the ship, denser and hotter than I was used to, soaked right into my pores.

The situation needed thought. With eighty smelly men and an airsick pooch stumbling around I wanted to be by myself. The place with the least traffic was the navigation pod, and I hid out in it for a quick cigarette, but Harry Bechmann found me and rousted me out. "Jesus, Swanilda," he snarled, "you know you can't smoke here. Come out and give us a hand cleaning up."

"Sure thing, Harry," I said gamely. He was one of the two best-looking men on the ship, and we still had ten days before we landed.

So I was a perfect brick for Harry. I cleaned up puppy mess and I stowed castoff overalls. I played ministering angel for the poor sod of an agronomist whose gout had been touched off in the freezer. I helped Harry try to zero in on the landing signals, and sympathized with him when he couldn't get a clear fix. Then I began to feel pretty rocky myself. And I realized that the old plumbing, out of action for sixty-one years, was trying to catch up. I was starting my period.

Some things never change.

Taken all in all, being reborn to a new life, considered as a sensory experience, was a total washout. It was about as smelly, messy and traumatic as being born the first time.

I thought longingly of Sexy Stan, my agent man, who got me into this. If only he were with me on the ship at that moment! First I would compliment him on his creative agentry. Then I would thank him for his concern for my welfare.

Then I would kill him.

By the time we were ready for penetration things had begun to sort themselves out. Medea was all fat and greasy-looking down below us, big red fried egg with a white yolk that Harry said was the heat pole. He still wasn't getting good signals: ambiguous readings from the RDF and no voice contact at all. But he locked in and told us to belt up for landing.

I can't say I was looking my best. My period had run its course, and Harry had relented enough to let me get into the storage compartment for one small bag—the risk of its losing pressure during the long flight had turned out to be a false alarm. Hot as the ship was, and bad as the food, I'd sweated off at least four or five kilos. That was all to the good. But my clothes didn't fit any more. I couldn't even take pleasure in counting each gram of the weight I had lost, because Harry kept changing the deceleration. One minute the scales would show me fatter than ever, and the next I'd hardly be there at all. Harry swore a lot while he was doing it, and the rest of us whispered to each other and wondered whether, if we had a better idea of what was going on, we would be scared witless. Whatever Ground

Control was supposed to be doing, it wasn't doing it. Harry looked as though he was having his work cut out for him to get us down safely.

But he did. Not counting the last couple seconds of deceleration, when I felt as though I weighed a metric ton and the safety web dug creases into all the best parts of my flesh, it was a piece of cake. We were down on the surface of Medea.

''Stay put for a minute,'' Harry yelled over the creaking of the hot metal and the sloshing of fuel in the pipes. He did something at the controls, and a sudden shrill whistle told us that the pressure inside and out was being equalized. That took a while. The rest of us tried to stare out of the few tiny portholes to see what our new home looked like. At first glance, nothing. There was supposed to be a colony, three thousand people there and nearby, with sunstills and farms and even a couple of factories working. None of that appeared. There was an ocean, or maybe a very big lake. There was a lot of uninspiring flat landscape, and in the distance maybe some trees, or something like trees. And that was it.

''I don't think this is the right place,'' said Bill Garmer, and the little old fux whined forebodingly. But Harry clenched his teeth and opened the hatch and ordered us out; and one by one we stepped onto the surface of Medea.

What a place! I could see why they had run the ship so hot. If we had come right to Medea out of the deep freeze we all would have died of heatstroke, and even so it was a close thing. The place wasn't just hot. It *looked* hot. That ugly sun, or whatever it was, was the red of a fireplace coal, and everything we looked at took on that coloration, shades of scarlet, shades of rust, and the whole thing soggy wherever you touched.

We clustered together outside the lander, looking depressed or astonished or mad, according to our moods. Harry was the angriest: ''—damn *lousy* landing procedures,'' he was muttering, ''and where the hell *is* everybody?'' We seemed to be out at the tail end of nowhere, flat rocky beach that stretched for kilometers along a greasy-looking lake. The old fux crept under my hand.

''They're coming, Harry,'' he whined, quivering with dismay. And so they were. Loping toward us were a pack of a dozen or more fuxes, nattering at each other and to us. Behind them, coming more slowly but still at a run, were half a dozen men and women. They looked particularly raunchy, even for this place, even at a distance. The closer they got the worse they looked. None of them had kept their appearances up, hair flying in all directions, the men with shaggy beards, their clothes sketchy and tattered.

What had I expected? A torchlight parade, a customs bureau, I don't know, but not this. Where were the great clouds of singing loons for me to tape and build a career on? Where the docile packs of fuxes tending the broad plantations, while the humans sipped their juleps and flirted in the shade? Oh, Stan, if only you weren't dead already, how gladly would I kill you for getting me into this!

The pack of fuxes circled around us, like hounds treeing a raccoon, growling at each other. My personal fux rubbed against me mournfully and then slunk away to join the others, turning and lolling his long maroon tongue out at us. ''Traitor,'' I snapped, but he didn't even look at me.

Harry Bechmann took charge. To the people who came trotting up he said forcefully, ''I want to know who's responsible for this foul-up, and I want measures taken to prevent a recurrence! Your downbeacon was on standby all the way. I never got a response to my clearance request. I had to navigate manually from low orbit to—''

''Shut up,'' panted the ugliest of the men, kicking a fux out of his way. He stared around at us, and even behind the ragged beard I could see his face fall. ''Shit, only one woman,'' he muttered.

''Ms. Swanilda Guthrie, yes,'' said Harry. ''I'm Harry Bechmann, commanding. This is my navigator—''

''I said shut up,'' snarled the man. ''All of you. Keep quiet, line up and take your clothes off.''

''Now see here!'' Harry began.

''Now,'' barked the bossman, reaching out for the nearest person to shove into line. The nearest person happened to be me.

Well, that was about all I could handle of that. They used to say that old Swanilda never really sang like a prima donna, but she sure had the temperament for it. I leaned forward with my handbag and slashed it across his face. ''I'm Swanilda Guthrie!'' I told him. ''I've had more concert dates than you have hairs in your scrawny—than you can count! I'm a star, and I want to be treated like one!''

The nearest fux sprang toward me, looking like the kind of thing you find in jars in veterinary schools. ''Shall I nip her, Jim-person?'' it whined.

The hairy man stood still, his hand to his chin where I'd caught him with the bag. ''Not just yet, fux,'' he said thickly, rotating his jaw a couple of times. ''When *he* comes *he*'ll decide. I may get to tame this one myself.''

The pilot had been staring, and now he cried: ''You're Jimmy Cargle!''

The hairy man looked at him, and the pilot went on excitedly, ''Sure, Jimmy! We were in stellar navigation together. You piloted the ship three years back!''

''Has it been three years?'' Cargle said wonderingly. ''Yeah. Maybe it has. But don't fool with me now, Harry, get your clothes off. All of you!'' He snaked the whip he was carrying. ''I know how you feel, all right? But I don't have time to talk about it now. Listen! They're coming, and if *he* gets here before you're ready it's my ass too!''

Harry sighed. ''Do what he says,'' he advised, beginning to strip. That was no big deal. You do Salome a few times in one of those East Bay theaters and you stop worrying about being naked in public, but this was kind of weird. They weren't even looking at me! Over the whimpering of the fuxes I was hearing some other sound; it grew louder; by the time we were bare they were all down on their knees, or the human beings were, while the fuxes were crouched with their heads between their forepaws.

And the sounds were getting loud, and I recognized them. Almost. They were a lot, but not quite entirely, like the tapes Sam had played for me.

And over the top of the lander came half a dozen Hallowe'en balloons, bobbing down out of the cloud. They were nearly two meters through, the first of them even bigger than that. But they weren't quite what I had expected, toy balloons looking no worse than your average Portuguese-man-o-war jellyfish. They were different. The terrible part of them was that along the bottom part of each, part of the balloon itself, like a ship's figurehead, was the outline of a sort of Picasso schematic bas-relief of a human body, and the bodies had faces, and they were all looking at us as they sang.

2.

I am the tenth and most successful of my line, Mark J, a credit to the industry and wisdom of my ancestors and their servants. When I sing the songs of the glory of my reign the whole flock joins in with joy, and the ruddy skies shake with our chorus, and even the forests resound to my majesty. But there is one song I do not sing, except in private.

It is a song of the time when I was newborn, and my nurse took me to have my future divined. A curious thing happened. The diviner was an old post-gonadal male, with that curious graying of the eyes that the servants develop shortly before they die. It is sung that their senses sharpen at that time, and that what they perceive is doubly certain because, being themselves so close to eternity, they are able to see through the veil. Well, if you will believe that you will believe anything. Still, it is curious, as I have said, and the evidence one way or another you may judge for yourself.

The diviner sniffed me all over very carefully. Then he nibbled, very delicately, a tiny sample of tissue from what was left of my birth sac. "Careful, careful," my nurse whined, knowing what would happen to her if I were harmed. The diviner did not even reply. He rolled the crumb around in his mouth, and then he spoke in a clear, high-pitched voice:

"Ingredients of Earth and ingredients of Air. This one is born to power."

My nurse sniffed. "Don't be an old fool," she said. She meant that all that was clear to begin with. Even if the diviner had not known who she was, and who the infant she carried was, both of which were unlikely, there would be no doubt that I was a human hybrid. In certain stretches of my gene pattern I retain clear traces of a male ancestor born in Clearwater Beach, Forida.

"You lack respect," the diviner said tepidly, his eyes glazing as he rolled the morsel over his tongue. "Yes, yes," he murmured. "Cytidine, uridine, adenosine—yes, thymidine. And there is guanosine. Now let us read the coding." The acuity of the servants in this respect is legendary, but they do like to take their time about it.

"Hurry," whined the nurse, glancing about fearfully. "If *he* finds us here—"

The diviner roused himself. "You destroy concentration," he complained. "Nevertheless, it is clear. He will live for virtue and die for vice, and he will rule the heavens. But he must beware of the heat of lust."

"Do you mean sex?" snapped my nurse. "All you old ones think about sex all the time."

"I mean lust," he said grayly, breathing in ragged gasps. "Pay me now, I will not live to enjoy it tomorrow." And so she gave him a shot of dream-maker, and he went off to sleep and never woke.

Now, you doubt all this, do you not? And yet I will astonish you; I will sing what you are thinking, even though you have not expressed it. It is: How can J-Mark know all these things, when he was just born when they occurred? Why does he sing of details that he could not possibly remember?

But there I have you! For I said, did I not, that a curious thing happened. As we were leaving the diviner's hut there was a raid of my father's servant-police. My nurse was arrested for exposing me to contamination from the old fux. She was destroyed and fed her to her own whelps but my new nurse, her sister, preserved the records. All that had happened was recorded on tape, and she played them to me when I was old enough to understand.

The curious thing is that what the diviner said has come true. Of my father's get there were many thousands, and at least forty as fully recombinant as I. But it is I who rule the heavens, and that I live for virtue is known to all who hear my song.

In the fifteenth terran of my rule we received a replenishment from Earth.

It was not, of course, intended for us, but in accordance with my instructions the Earth-servants transmitted a homing signal to the replenishment vessel. At the same time certain of my own sibs swarmed toward the major encampments of the Earth two-legs, carrying devices for use at such times. These had been devised by the wisest of my fuxes and constructed with great pains by Earth-servants skilled in these matters. When the two-leg encampments sang to the replenishment vessel to come, the devices learned the signal and retransmitted it out of phase, so that all the vessel heard of the welcoming song was a discordant squeal. Often the device did not work. Then the Earth encampments received a new shipload of colonists, and my servants received sufficient punishment to make them dislike failure. But when it did my followers increased.

All of this was done by rote as soon as a vessel was detected. I was with the swarm in high-flight, singing beautifully. But it has always been my custom to inspect the replenishment servants in person and at once, so with six of my nearest gene-sibs I left the swarm to perform this function.

As usual, the new servants arrived in deplorable state. The stink of the deep-freeze was still on them. My personal ground-servant had run to meet me there, with others of his pack. He was shocked and disgusted, but then he was newly post-gonadal and had never seen an arriving shipment before. ''Lord,'' he said, ''look how feeble they are! Can we not receive better specimens?''

My personal man-servant took this as an affront. ''Foolish fux!'' he cried. ''We can't tell them what to send! Anyway, we'll fatten them up, lord.''

''Not too fat,'' I cautioned. I was not angry. Nor was I trying to tell him his business; when you have a good stock-handler you let him do as he knows best to do. But you must show him that you are watching.

He cowered. ''No, no, lord! Certainly, not too fat!''

I was at nearly neutral buoyancy, holding my ground-servant by the tail to keep from being blown about. ''Closer,'' I murmured, and allowed him to bring me nearer to the new servants. There were eight males and only one female. Pity. I wanted more females for breeding. It is always good to introduce new bloodlines into the mix when you can get them. The untamed males made attempts to communicate with me in several languages, most of which I knew. However, I did not listen to the words. They might have been threatening. What you do not hear you need not punish, and there is no point in punishing untamed stock. It can damage them, and once they have been tamed it makes no difference anyway.

''They are not very big,'' I sang. My ground-servant had recovered his courage and smirked.

''Not like us, no, lord,'' he agreed. I pinched his tail to calm him. He yelped and was silent, properly terrified again. The new males were of course as yet unaltered. Even so, the size of their genitals would not impress a ground-servant. The penis of a rutty fux is nearly an eighth of his body length. Yet a fux is only a meter or so long. I exhaled and sank to the ground before them, catching at my fux's familiar fur to steady myself. ''Takes you back to the old days, eh?'' I observed kindly to him.

He laughed obediently, but a touch wistfully. His rutty time was only a few seasons behind him, and I could see that he still regretted it. ''Do we need males for breeding?'' I asked the man-servant.

''No, lord,'' he gasped. He was still out of breath from his run to meet me. He was replenishment stock himself, and not adapted to the muggy heat of Medea; also he was growing fat.

''Nevertheless,'' I sang, ''I think we will keep these whole for the time being. One never knows when we may need a new breeder.''

Quaking, "Yes, lord."

"But don't breed them yet."

"Not even the female?" He was still frightened, but not so frightened that he was not also disappointed. I could see who he had picked to breed the female with.

I did not answer, merely rotated to look at him carefully.

"Yes, lord," he said miserably. "No, lord. As you have sung, they are not to be bred. I will have them tamed at once."

But I was not through with him yet. "No, not even tamed," I sang. I had no particular reason for that, except to keep him in fear.

Unless what the diviner told my nurse was a reason. There was something about these replenishments which suggested an interesting kind of vice. I would be careful not to die of it, of course. But it would be exciting to come close. My glorious ancestors, before the interbreeding that produced me, used to play a game with the fuxes, bobbing low and close to them, defying them to leap high enough to catch them, while the fuxes went mad with frustration and appetite. They always won that game, of course, or else I would not have been here.

It is now an appropriate time for me to sing my name, titles and ancestry. I am Phosphodiesteraze Oliver Strong-Singer Two-Group Shackleton, Mark J. I am of mixed Earth and Medean blood, fully recombinant and true-breeding, as were both my parents before me. Of course, I am the flockmaster. My flock is not primitive aboriginal balloonists; there are twenty other recombinants in the swarm, plus females and young. We sing Earth-English, and our songs have triumphed at every gen-chorus since I first became flockmaster. The sky of my flock includes all the transmontane currents surrounding the Purple Sea, and we own six herds of fuxes and two of Earth-humans, one used for draft purposes and food only, which is alleged to be the remnant of a Chinese settlement, and the major herd which is constantly replenished by infusions of new blood from Earth. They are my hobby. They give me more pleasure than any other of my possessions, although they do not sing. Oh, a few do, and there is legend that on Earth there are those who sing as beautifully as, even, perhaps some of my flock. And each new replenishment I study carefully to hear if there is a singer among them, and always I am disappointed

It is sung that when Medea was first visited from Earth there was a biological enmity between the organisms from the two planets. No Earth creature could eat a Medean organism, or even survive in comfort near one. No Medean could tolerate the presence of creatures from Earth. This is well sung and therefore true, but it is hard to believe.

It is further sung that the Earth persons, my recombinant ancestors, were skilled in the manipulation of genetic materials. So they succeeded before very long in finding procedures which suppressed the bad reaction between the two kinds of beings, and succeeded soon after in causing them to interbreed. I sing of interbreedings between plants and lower forms of life at first, but it was not long before their art reached higher. There is clear truth in that. Am I not here?

It has also been sung that the Earth-ancestors wished to use the beings of Medea and the produce of the planet to enrich Earth—not to put too fine a point on it, to loot my planet. This is not sung any longer in my swarm, nor among the abo swarms nearby who acknowledge my leadership. It would be disrespectful to my ancestors. Now and again the storm winds will bring us a tatter of a swarm that holds to the old songs. Sometimes they sing of this. But if they do not learn to stop by themselves we stop them.

In this private memoir I will admit that the song may be true. It does not matter. What my ancestors may have looked for is one thing. What they found is another. What they found is me, and my siblings, and all of the generations from the time of the recombinant breeding till the end of the world.

They set about to create a being that would have all of the majesty and greatness of Earth, and all of the free-flying beauty and spirit of Medea. And now, in the tenth generation, here am I.

The proof of all this is that I rule.

Who do I rule over? I rule over the six herds of fuxes. Once they fed upon my aerial ancestors when they could. Now they come to me and my swarm for the dream-making drops. They will eat each other before they will harm one of us. (I do not, of course, mean the abos. When they can catch one of those they eat it, all right. I do not interfere.)

I rule over the Earth persons. They are my own blood, which the fuxes are not. But they too come to me for their dreams.

I rule over the abos, the unchanged primitive stock of balloonists that supplied half my heritage. I rule them through fear, because they know that my kind can destroy them if we will, for the weapons that will do this are my gift from my Earth-ancestors.

And finally I rule over even the other recombinants. I rule because I am bigger and stronger and wiser, and because I have the songs to outsing them. The diviner was right.

So I have sung this story into one of the objects the replenishments bring me from Earth. It is a machine, but there is too much Earth in me for me to hate machines uncritically. This is a good machine. It records my song. When I play it back I can hear the glory with which I sing, and so I am reassured once more, by the beauty of my song and the majesty of my presence, that I am indeed the one who must rule.

And perhaps not only one little corner of Medea. Perhaps, one day, all of Medea, even the encampments of the two-legs and the scattered settlements, as far as the frozen lands, wherever winds blow and songs may be sung.

And perhaps, one day, not only Medea.

3.

This big bobbling gasbag thing came toward me, the size of a calf and covered with pink and green polka dots

Thirty years before the footlights came to my rescue. I stood tall and confronted him as fearlessly as I ever faced down a ravager, or assassin, or the English troops with their torches to set me afire; oh, I was good. The hard part was not laughing. He did look so very peculiar, with that skinny body glued to the bottom of the big balloon, creasing it—I know what he looked like, he looked like my ex-husband's pajama bottoms from behind, as he sat on the edge of the bed to fumble for his slippers. But, oh, my, there was no comedy in him, this thing. He reached out that long, fragile arm and tweaked my breast.

"Hey, stop that!" I cried.

He bounced back, grabbing the fellow named Jimmy Cargle by the hair. The sleepy eyes in the pale, squeezed-in face opened wide to look at me, and he sang something in that irritating high-pitched yodel they used.

"Speak up, man," I told him. "I can't understand you."

The eyes didn't seem sleepy any more. They were looking at me very carefully, and they were scarey. The men from the rocket had been herded off, almost out of earshot, and I felt pretty alone.

The gasbag tried again, and this time I understood him. "Sing for me, Swanilda-person," he shrilled, way up in the high coloratura.

"Why not?" I thought for a minute, and gave him a few bars of my all-purpose spaghetti aria:

"Caro nome, un bel di,
"Una voce poco fa.
"Mi, mi chiamano Mimì,
"Una furtiva lagrima."

I gave him plenty of shake in the third and fourth lines, a real burlesque bel-canto. But nobody was laughing, least of all him.

"You sing in strange words," he complained. "And when you use words I know, you do not sing. Why is that?"

I was getting used to his register—not his fault, I knew; it was because he was using hydrogen to sing with, and that elevates the voice. I used to know a faded prima donna who carried a helium balloon into recording studios, and took a lungful of gas before the high parts in *Lakmé*. I said, carefully, and with attention to pitch, "Who are you? And what is going on here?"

"I am J-Mark," he sang, in that reedy, nasty voice. And that was all. He studied me a while longer, and then commanded: "Taste her, fux!"

One of the little red beasts crawled toward me, belly against the ground, eyes on J-Mark. He darted a quick look at me and whined, "Lord! She may harm me."

"Taste her!"

The fux whimpered and then, quick as lightning, snapped at my hip. I yelled and kicked him rolling across the ground, his tail lashing, legs scrambling, folds of skin extended like sails to help him keep his footing. I clapped a hand to my hip and it came away bloody. "What the hell's going on?" I shouted.

"Be still," commanded the big balloon. "Well?"

The fux chewed his cud for a second, little yellow eyes on me. "Oh, lord," he said at last, "this one tastes bad! There is pain and death in her."

"I do not seek your opinions, just the assay."

"Yes, lord. There is no genetic incompatibility," said the fux unwillingly. "But, lord, I do implore you—"

"Stop before you do yourself harm," sang the figurehead below the bag, letting go of Jimmy Cargle's hair. He drifted up and away, and the other ballons followed him. J-Mark sang something. The others picked it up like an oratorio, mazing the words, but what he seemed to be saying was: "Prepare her for the mating."

Now, there was a time when if somebody had said that I would have felt pretty cheerful. If *anybody* had said that. That was before the six months in Switzerland

You don't know what it's like to be getting along in years and still go for the boys. You see, they don't go for you.

It isn't fair because, in any practical sense, you've still got everything you need. The body runs just fine; mine finer than most, if I may say so, the juices still flowing, the booz not even sagging, or anyway not any more than when I was thirty-five. But under the eyes were those terrible black bags. And it doesn't matter how many little clusters of flowers you put at the bodice, the wrinkles of the neck still show and the hair, Jesus, even the hair gets thin. Aging ladies don't get nastier looking than aging men. They just get looked at harder.

What to do?

Switzerland, that was what to do. I took every dime I had stashed away and bought an appointment in a clinic in Lausanne. They tucked my skin and emulsified my collagen and even implanted my follicles, all part of the service, nothing is too good for the people who have the money. Especially the collagen. That's the part in the larynx that gets all harsh and brittle. It makes the voice crack, and a singer with a cracking voice isn't a singer any more. What she is is dead. The word we use for that is "mime", and you can hang on in miming parts for a long time, but you know, and the audience knows, that the best part of you is gone. But after the time in Switzerland the voice was back. And so was a lot of the rest of me. By the time I was out of convalescent care I could look in the eyes of the Turkish orderlies, and their eyes weren't saying, "Gee, she must've been something once," any more. What their eyes were saying was, "Let's get it on."

Of course, they were Turks. Not even the Swiss could carve off that extra thirty kilos. I would have to do that myself. Only I didn't. Food just tasted too good and, besides, I've seen it happen before, somebody spends the wad on plastic surgery and then goes on a crash diet to top it off and, bam, the loose skin folds back around the place where the fat used to be and they're as bad as before, only skinny. And broke. So it didn't do all that much good for me, Switzerland didn't, except what you could call socially. There must be a lot of Turkish blood in a lot of opera-lovers, especially the old, bald ones. I didn't do much on the stage, but, oh, the curtain calls I took in the dressing rooms!

"You can put your clothes back on," said Jimmy Cargle. He was holding me by the dangling ends of my braids, but he wasn't looking at me. What he was looking at was, actually, a rather strange sight. The balloons had halted a few meters up and not far away, and all the men from the ship were being dragged underneath them by the people who had come to meet us. The resident males were all anticipation, the ones who had come on the ship with me apprehension, but then from the bobbing ballons came a spray of glistening moisture, falling on them all alike. And all their expressions became the same. Newcomer or oldtimer, on every face there was suddenly such a look of mellifluous joy as I had not seen since I let a Milanese impresario sniff my instep

"What are they doing?" I demanded.

He took his longing eyes off them and said, "Getting their kicks, Swanilda. That's what keeps us here. Only you don't get any right now, because *he* said you didn't, and I don't get any either because I have to watch you. On the other hand," he went on thoughtfully, shifting hands in order to fondle the small of my back, "sooner or later you'll probably make it all up to me."

I swallowed and tolerated his hand. "Jimmy," I said humbly, "please tell me what this is all about. I don't understand. Where's the colony? It isn't the way I expected at all! I thought I was going to be welcomed with—hell, I don't know, maybe not a brass band exactly. But not this."

He looked at me with haunted eyes. "So did I," he said.

"But then—"

He said, "Get on back to the pens, Swanilda. I'll tell you about it while we're getting you ready."

"Ready for what?"

He looked at me closely. "I bet you know for what," he said, and grinned.

He talked as we walked. I tried to listen, but it wasn't easy; I kept thinking about what looked like my next big performance, and it didn't look like fun. Anyway, most of what he was saying was stuff we all knew about Medea: There were three dominant races on it, the balloonists, the fuxes and human beings. When Medea was first visited there were only two. Then only one, but a different one, as the Earth colonists, with their superior weapons, fragmented and destroyed the cultures of the autochthones.

That part we had all known back before I left Earth. Us God-ordained human beings had brought mental health and the wonders of science to the poor savage Medeans. But then something had happened.

I began to listen more closely, because this part was new. The first attempts were made to farm good old Earth food on Medea, artichokes and avocados and beef cattle. No go. Each biology triggered the immune responses of the others, and they killed each other. Then someone got busy with recombinant DNA, cross-linking Medean and Earth genes. It worked for plants. It worked for livestock.

Finally it worked for human beings and both fuxes and balloonists. The crosses with the fuxes didn't amount to much, Jimmy didn't say why. But with the balloonists—

''Well, you've seen *him*,'' Jimmy said, and looked quickly over his shoulder as he spoke.

''Bloody awful he is to see, too.''

''Watch your mouth, lady!''

I tried to put myself in his position. He was obviously scared, and maybe he knew a reason I didn't know. So I said, ''Jimmy? He's nothing but a bubble of hydrogen gas with a skinny human being tacked onto it. Why does he scare you so much?''

He managed a laugh. ''*Scared?* That's funny, Swanilda. There's nothing to *scare* me. It's just—'' He sighed. ''Well, they have it all over us in one way,'' he said. ''When they come, the stuff is like the best dope you ever had in your life. A high you wouldn't believe! The first settlers used to keep a couple around just for the highs, you know, Saturday night you go out and tickle a couple of balloonists and tie one on. Now—well, now they're the ones who keep *us* around. We're addicted. Or at least,'' he said, staring contemptuously at the other human beings, wobbling euphorically in the same general direction as we were going, ''*they* are. I could personally kick it any time.''

''Then why—''

''Oh, shut up, Swanilda,'' he said, exasperated. ''I'm a boss, can't you see that? I've got first pick of everything. So it's just not to my advantage to want to change anything.''

He rubbed his chin for a minute, and then nodded decisively, ''Yep, it's a good way to live, Swanilda,'' he said. ''*He* sees that we get high when we need it. In return, we keep the fuxes in line for *him*. The fuxes do the hard work, food and all that. And we all live happily together, and where is there a better life for anybody?''

Well, I could have named fifty without stopping to think, starting as low as being a tenor's personal valet. But I could see he didn't want to hear that.

"Now get in the pens," he ordered. "One of the fuxes will clean you up and tell you what to do."

"Can't you stay, Jimmy?" I wheedled. His company wasn't that much, but it beat anything else I'd discovered on Medea.

"No way, lady. I've got—uh, I've got something to do. See you later." And he turned and was off on a dead run, toward where one of the balloons was still bobbing impatiently, ready to give him his personal shot of the joy he wasn't really addicted to.

The fux in charge of getting me ready was the same one who had nipped me in the rump. You could tell he was scared, but I tried to put him at his ease. "I'm not going to kill you," I said.

"Thank you, person! Here, let me help you—" And he licked the wound clean. Curiously, it seemed to help. The bleeding had stopped, and the ugly color went out of the bite before he had finished.

"Is it better?" he asked, sitting back on his haunches and lolling his tongue out at me.

"It'll do. Now what?"

"You bathe." And he backed away, and tugged at a lever with his teeth, and a barrel of water fell over me. I came out roaring and gasping, but a little clean.

"Now take off those clothes," said the fux, dexterously shaking out a fold of a gauzy material. When I was bare enough to suit him he draped it over my shoulders. "You do not seem frightened, Swanilda-person," he observed. "No doubt you are grateful for the honor?"

Well, grateful I was not, but I wasn't particularly frightened, either. J-Mark was not, taken all in all, a lot worse than some concert managers I've dealt with. But I wasn't happy, either. "Queasy" describes it. I said, "I've never done, uh, anything like this before. I mean, with another species."

The fux sat back on his haunches, regarding me. "I don't think I have enough fabric," he said meditatively.

"Is that, uh, common here? I mean, do the different species mate?"

He barked a laugh. "All the time, Swanilda-person, all the time."

"And that accounts for halfbreeds like big-belly?"

"Well, no. Intraspecial sex isn't fertile. You need a specialist in protoplast preparation. You can work with the plasmids, but not usually the gross gametes."

"Uh-huh." I said helpfully, but he was finished. I asked, "Is it only between humans and the ballons?"

"Oh, no, person! Between humans and fuxes, too. Even three-way breedings . . . as," he added, chuckling, "you will no doubt find out. Our lord has selected for certain of our characteristics, too.'' He busied himself nipping at the gauze for a moment, then said, ''It is admirable in you that you are not afraid.''

''How about you? You don't seem scared by him.''

He barked again—it was hard to be sure whether he was laughing or angry. ''Why should I be? Two seasons ago I was still in my rutty prime. *Then* I would have been afraid. *Then* I didn't want to die. But now—''

He sighed, and threw the gauze over me again. ''They tell me,'' he said, tugging it this way and that, ''that in another season or two I will reconcile myself to the change of life. Then it will seem terrible to me that at one time I was so obsessed by sex. Now— Now, Swanilda-person, it doesn't seem terrible at all.''

I could hear my dear companions of the flight from Earth, but they were in another pen, and to judge from the sound of them they were even less happy than I. If such a thing can be imagined.

At least I was left alone for a bit, presumably to sleep. The permanent ochre light gave no cue for that, and I wasn't sleepy anyway. What I wanted was a bottle of wine, a pack of cigarettes and a man. The first didn't exist. The second was pretty skimpy; I was down to two cigarettes in the pack. And the third was not exactly what I had had in mind. I was beginning to piece things together in my mind. Obviously old J-Mark was running some sort of shanghai racket, diverting shipments from Earth to his personal pleasure, which implied that somewhere on Medea there must be the place where we should have gone. Where, maybe, somebody would be interested in rescuing me, if only I could figure out a way of getting in touch with them.

But that didn't look easy.

If I could get to the ship—

But even if I did, I really hadn't paid much attention to the radio. Or to anything else except the men and the way my tooth felt. Harry Bechmann could probably take care of the whole thing standing on his head, if I could talk to him, and if we could get to the ship, and if—and, most of all, *if* he showed any interest in that. From the way Jimmy Cargle acted, I wasn't real sure that would be so. Whatever the loons squirted out of their sex organs, it seemed to be pretty powerfully addictive. Now that I thought of it, I had heard something about that on Earth. It had seemed pretty funny at the time, getting a balloon to, ah, how would you say it?, abuse himself so you could get a high from the semen. I hadn't really understood how that worked for the fuxes, but maybe it had something to do with the fact that old J-Mark was part human. The hallucinogenic effect had something to do with the incompatibility between Earth and Medean biochemistries, and no doubt it could work both ways.

Regardless. Jimmy Cargle showed no real desire to be free of the tyranny of the balloonists. I had the desire, all right. But I didn't see any good way to accomplish it.

Was ever a soprano so beset by would-be ravagers and pain?

All the time, friends. But in my previous experience, only on the stage.

4.

It is one of the sacred obligations of my high station to judge the disputes and transgressions of lesser beings. Like most sacred obligations, it is a bore. I listened to one two-leg complaining about the theft of clothing by another, and to females of my flock desirous of bearing young. It is well to dispense justice with an even hand, and so I have strict rules by which I abide for such judging. When one servant complains against another, I punish both. When a servant petitions for a favor, I refuse it. This increases the understanding of my fairness, and it also reduces the number of cases brought before me.

The only interesting case was that of an aging fux, but that was of great interest. He was a trusted servant, whom I had graced with the charge of those biological facilities which make it possible for our hybrids to exist. He had failed his trust. The poor creature had been so misguided as to attempt to pervert the use of his laboratory to an effort to restore potency to his poor post-rutty gonads. This was not merely ill-judged. It smacked of vice, and I have always had special care to stamp out vice among my servants, bearing in mind the words of the diviner.

He cowered as he heard my song, for he could hear my anger in it. ''You have misused my property,'' I sang, and the flock choired agreement. ''What will you sing before I pass sentence on you?''

''Lord,'' whimpered the sad little thing, ''I have no defense. I know I have done wrong. Only—'' He hesitated, peering fearfully up at me. As though anything he could say might make his position worse!

''Sing on,'' I commanded justly. ''I will hear.''

He sniffled, and then went on. ''Only in the old days it was different, Lord. We were honored when we passed the rutty time. We were honored for the wisdom of our age, and our words were given much thought. Now that is gone. Our people are slaves to yours. We live only for the dream-milt, and there is nothing in our lives any more that smells as good as the memory of a breedy female.''

My ground-servant lashed his tail in fury, peeking up at me for a cue. ''What filth, Lord!'' he cried. He was trying to curry favor, but he was right to do so. I gave him an opportunity to increase his esteem in my eyes.

''Say the punishment for this fool,'' I invited him.

''Let him be slain!'' Fuxes are all alike. They have no loyalty to each other.

''Say on,'' I sang invitingly.

"I will, Lord! His smell is most vile in what he says. Oh, to be sure," he went on, staring angrily at the accused one, "perhaps in some ways the old days were more filled with, ah, with empty pleasure. Without disrespect, this is possibly so. When our races were equal—" He paused to see if I was angry, but I remained silent. Fuxes can never tell anything from our expressions. "When our races were equal and the two-legs had not yet come from the stars, yes, then there was a kind of freedom which no longer exists. We ate well on each other, Lord. When our ancestors caught one of yours, ah, the taste of him! Then your ancestors were only balloonists, not yet contam—not yet enriched," he corrected himself, looking up at me warily, "with the admixture of other genetic materials from the two-legs. That was certainly different, Lord. Not better. No, certainly not better! In no way was it better, or even as good—"

He trailed off miserably, perceiving at last that he had said too much.

After a moment I sang, "Shall I punish one and not the other?" He made no answer. By the color of his eyes and the tremor of his paws it was clear that he knew what was ahead. Fuxes are not fools, at least when post-gonadal. "Then let them both be slain," I sang justly, and the swarm chorused agreement with my wise decision.

The Earth-servants stepped back and formed a ring around the two, and shot them full of missiles. The other fuxes looked glum but did nothing to interfere.

When they had stopped trembling in death I asked, "Is there any other cause to be judged at this time?"

My servants looked around at each other, and then one of the two-legs spoke humbly. "No, Lord. We are grateful for your wisdom."

"Of course," I sang, and my swarm raised their voices in exultation at the justice of my judging. The ground-servants studied each other's expressions to make sure that all were showing agreement. Of course they were; and we let go our holds and rose toward the sky.

Judging is a downer, but as we soared my spirits were restored. I sang. Although I always sing well, I am sure that I sang even more beautifully than usual that day.

I sang of my virtues, for that is always a popular theme with the members of my swarm. And now, you ask yourself, how can J-Mark know what is popular or not, since none would dare speak against the beauty of his voice? That is a wise question. I have often punished servants for asking it, but no one can punish me and I have asked it of myself, and this is the answer: Since I am lord of the flock, it is I who set standards for all. And I like it. Therefore all others must.

It is by this process of syllogistic logic that I have disposed of other nagging self-doubts that might otherwise have troubled me. I give you an example. The two-legged servants from Earth and the ground-servants obey my every order. But what is to tell whether they do so out of loyalty and love, or merely out of addiction to the hallucinogens in my milt and perhaps terror at the thought of reprisals?

When I was newly swollen to rule these thoughts crossed my mind, but here is the argument with which I disposed of them: It is known that there are settlements of two-legs which do not acknowledge my mastery, and also many herds of fuxes in other parts of the world. What is the difference between them and my loyal subjects? It is only that these others have not had a chance to know me well, and thus to love and obey me. It would be a virtue to give them that chance. And, as my diviner foretold, I am destined to live for virtue.

So I sang of these things as we soared. I sang of the proud heritage of my line, and then, because my mind was full of my strong new singing female from Earth, I sang of her. Her body was of course repulsive, and my song reflected that. But that was a small matter. Her genes could be of great value. It was sure that the day would come when I would rule all of Medea, but why only Medea? With a new mother from Earth, my descendants could rule both planets!

And it was of this that I sang, of the two-leg female from Earth, and of the descendants I would have from her body. Some of the females at the edge of my flock were furious. One of them even dared sing a counterpoint about the virtues of a pure hereditary line, but I did not bother to chastise her. She had flown under every male in my flock, and we all knew how to judge her "purity".

My song became harsher as I sang of the female two-leg's qualities. Her body was much too dense. Her singing was very poor indeed by our standards. And I did not care for the stink of her. Even washed up, she was all salt and congeners and not enough good healthy methane. I could have her disinfected, but the attempts I had made in doing that sort of thing to two-legs before had been unfortunate for the two-legs. Worse. What of her mind? Could she transmit to our descendants that intelligence and acuity for which I and all my line are famous? She did not seem to understand all that I sang to her, although I had been careful to reinforce my song with figures of speech and factual material culled from my considerable knowledge of Earth. And I came back to her song. She could never sing with the flock, I thought, and my song took on a dejected note that caused the younger members of the flock to falter and float closer to the grown ones.

But what was I thinking of? She could never fly anyway. Not with that gross, solid body, totally lacking in gas-sacs. Ground-bound and ugly, ill-smelling and, like all two-legs, addicted to vicious practices, slow of wit and gross of voice—what was I thinking of indeed?

Yet there was no real need for me to concern myself with any of these things. My body did not have to come in contact with hers in any closer way than to any other Earth-servant. It would be seemly to perform a copulation with her once for the sake of tradition, but how long could that last? Then it was only her chemistry I needed, not her flesh. The flesh could be dispensed with entirely once a properly compounded ovum had been constructed. Whether the ovum ripened in her body or some other was of no consequence.

As I realized that, my song soared and grew, and all the flock joined in the chorus of joy. All but a few of the females.

That was a separate problem to trouble my serenity. In the days of old, while our females launched their eggs wherever the winds might fly them, no female ever felt concern about the fate of the offspring. Now that some of them had live-birthing bodies new problems were beginning to arise. ''Their'' children should inherit. ''Their'' descendants were preferred over others. It had been a mistake to include them in the recombinant strains. But it was not a mistake that could not be rectified, if they did not mend their ways.

With my mind at peace, I sought my two-leg bride and entered into her breeding pen. I clung to the padded top of the roofless walls and looked down to behold her.

At least she retained a sense of humor. ''Get lost, freak,'' she joked.

I have always been able to jest with my inferiors in a completely open way, so I returned her gay mood. ''It is amusing, is it not,'' I sang, ''that this greatest occasion of your life may also be your last?''

''What the hell are you talking about?'' I could not help it, I shrank back from the raucous sound of her voice. She did not sing well, indeed! Her voice was a full octave deeper than was proper even for a full-grown male, although at certain times she could reach a reasonable pitch. Even then, her song was hardly more harmonious than the mating screech of a rutty fux.

Yet what had to be had to be. I was determined to put her at ease, and so I stretched down to catch her hair, pulling myself to her level. ''Cut it out, tickface,'' she said humorously, as I clambered down her side until our faces were close together.

Then she did a thing hard to forgive. She made as if to strike me.

My little ground-servant was close by and caught at her arm in time to stop her—fortunately for both of them. The female shrieked, perhaps because of the sharpness of his teeth, and the fux mumbled, through his mouthful of her arm, ''Shall I kill her, Lord?''

I did not answer at once. The matter required thought.

A jest was a jest, but joking should not go too far. For a moment I considered omitting the copulation, but, as everyone who knows me will attest, it is a part of my personality to carry to completion whatever project I embark upon. Yet I could not allow her to offer me physical violence! I could have had her bound. Or muted. Or domesticated, as the other Earth-servants were domesticated. That would happen in any event after the copulation, since the ecstasy of my divine seed would addict her and tame her forever. But the symbolic mating itself was another matter. I did not want a zombie-bride. I wanted her to want me. For that I chose to rely not on the narcotic powers of my semen, but on my golden song. I would sing her into it.

And so I sang, "Release her." The fux slunk away, frustration and puzzlement all over him. He knew what would have happened if any other servant had dared such a jest. "Not too far," I cautioned, and he grumbled:

"Yes, Lord."

"I will now seduce this female," I explained. "You are charged to intervene if she seems about to harm me. You will not fail in this."

"No, Lord."

I turned my attention to the Earth female. "Swanilda," I sang, "I have decided to father a child on you. Your DNA patterns show no material lethality or teratogenicity, and they comport well with mine. So you will parent the next ruler of our flock, and perhaps more than our flock."

She seemed agitated. *"What?"*

I winced. "I know the honor is overwhelming," I sang, "but please keep your voice down. Let me explain how this is done. There will be a copulation, but that is not where the impregnation will occur. That is only for tradition's sake, and, of course," I added gallantly, "because I lust after your flesh." There was no truth in that, but I wanted to make her feel good. It costs nothing to be considerate, when possible. "The actual impregnation will occur in our molecular biology laboratory. An ovum will be removed from your womb. Certain chemicals from your genes and mine will be implanted in it. Then it will be returned. Of course, it will be rather large, and as it develops there will be some discomfort. But you will be able to carry it to term. My fuxes never fail in this. They would not dare."

The female was shaking, evidently from astonishment and joy. As a precaution I transferred myself to the fur of the ground-servant. "Are you all right?" I asked solicitously.

She laughed that terrible, untuned laugh. "I guess you could say that. Just sort of, what would you say, taken aback. I've never been a mother before."

"The greater the virtue," I sang in approval.

"And honest, J-Mark, I'm afraid it won't work. I mean, I had my laparascopy long ago. No kids."

"Fux!"

The little creature buried its head in its paws and peered up despairingly. "Lord," it whined, "it is true, there was a surgical intervention in her of the kind the two-legs practice to prevent pregnancy. But we can easily bypass that. Ova are still formed in her. They will be vital. Not many. She is not of prime breeding age. But she will conceive, yes, Lord."

"Are you sure?" she demanded. "That son of a bitch doctor promised me no kids!"

My good humor was restored. "If my fux says it is so, you need not worry," I sang benevolently. "So, my dear. All is in order. Shall I begin the copulation now?"

She seemed quite distressed, and I helped her over her nervousness. "Wait," I sang graciously. "I will call our flock to observe the ceremony. They will find it very interesting."

I sang the flock down to the mating pen. They perched warily on the padded walls, peering down, singing querulously to each other. I was displeased and embarrassed. "Come closer!" I commanded. "And sing joyfully of what is about to happen if you would give your lord pleasure."

Knowing what was good for them, they sank down to cluster around us and began to choir more harmoniously. The two-leg jumped away as one of them caught at her hair. "No, no," I sang in jolly phrasing, "do not be too eager. The Swanilda-person must be unencumbered for the mating."

"Yeah, now, wait a minute," she said, staring about at the members of my swarm in awe and reverence. "I don't usually do sex shows. Not in public. And even the concert managers usually throw in a little foreplay."

The term was unfamiliar to me. I resolved to deal with the fuxes who had failed to teach me properly, and was compelled to sing, "I do not think I have any foreplay."

"I wouldn't doubt that, tickface," she said, her natural light-heartedness showing itself again. "Doesn't the condemned woman at least get a last cigarette?"

Another word I did not know! "I do not think I have any cigarette, either."

"That at least I can supply for myself," she said, rummaging in her discarded Earth clothes. And from them she drew out what looked like a bent paper cylinder, and also what looked like, and was, a forbidden thing. A machine to make flame.

I sang my command at the top of my voice, a long fortissimo "No-o-o-o-o. . . ." But she had already produced the flame, and to my utter, and final, horror my voice itself, the God-breath of hydrogen that gave me song, became a long plume of violet flame. And so ended the last of the greatest line Medea had ever seen.

5.

And so, dear friends, I saved our world. Maybe all of our worlds. You'd think people would appreciate it more.

When Cargle and Bechmann finally got detoxed enough to get through to the other communities on Medea, I really expected a little more of We owe you everything, Swanilda, and What a great person you are, Swanilda.

I expected a lot more than I got. The most pleased you could call them was ''mildly''. They did, however, help patch me back together again, which was no small job in itself.

Part of what was wrong with me was burns. When I lit my lighter that idiot was pointing right at me, and what was left of my hair went up in smelly smoke. I mean *all* of it. Or at least all of it above the neck, including eyelashes and eyebrows. So I wasn't really noticing when he turned purple flame and burst, or even when the rest of his gang of loonies caught fire from the flaming trash and followed his good example.

His dying scream was a long plume of flame, like a blowtorch aimed right at me. Then they were all going, drippy blobs of fire coming down that were stickily melted parts of their bodies, and drippy blobs going *up* that were pulses of burning gas. The things were all hydrogen inside. They were nothing more than thin skins over fires waiting to explode. I just helped them along. The screaming was awful. The heat was unbearable. And the smell was the worst of all.

Fortunately it wasn't me he was holding onto when he went up. It was the fux. The poor thing lost most of its fur before it could get free, and then it was screaming—not so much with pain as with fear. ''Swanilda-person!'' it shrieked. ''What have you done?''

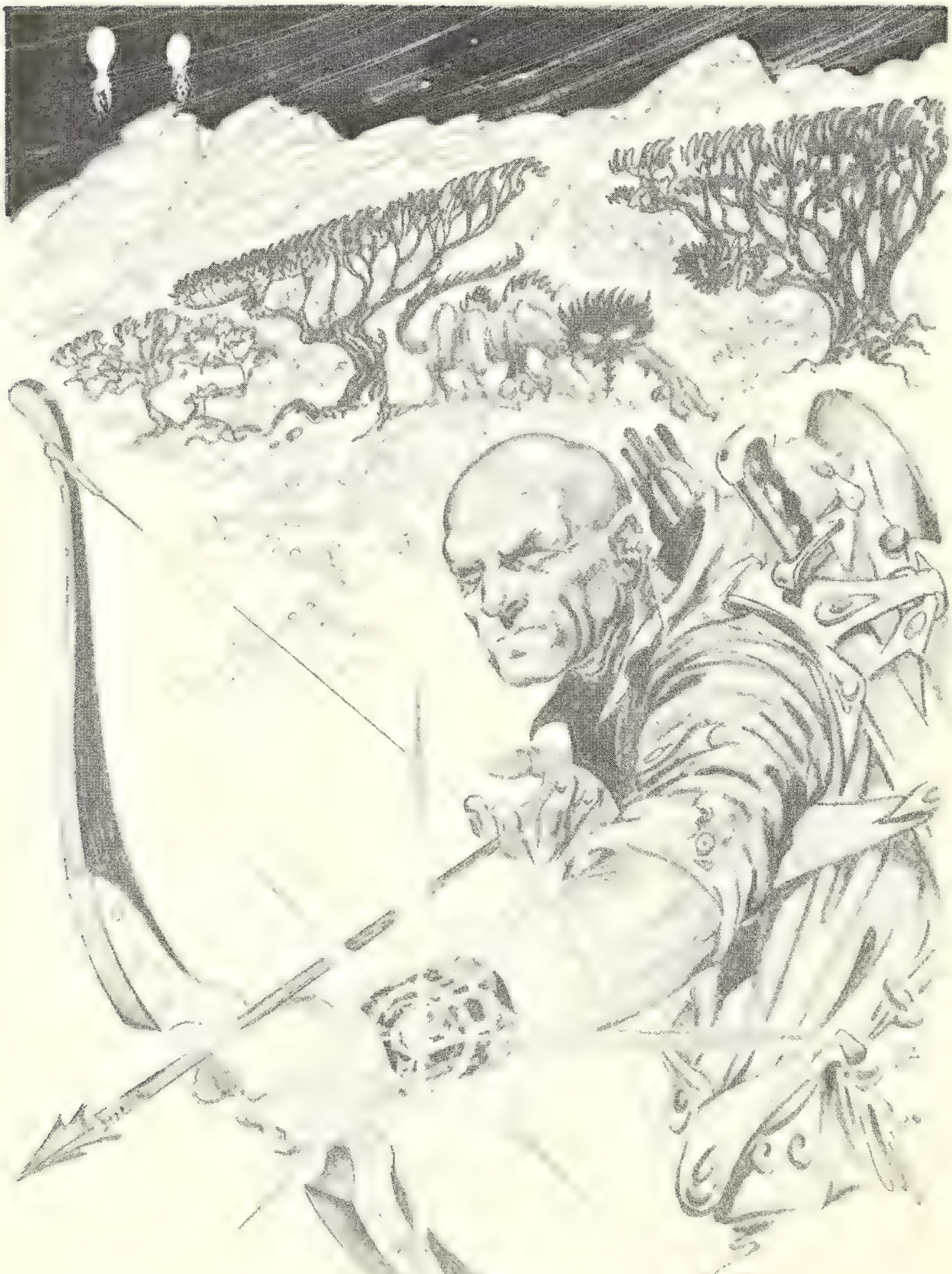
Well, talk about let-downs! What had I done, forsooth.

That's when years of Bayreuth training showed their stuff. Admittedly I wasn't in the cast, but all that Wagner taught me what a soprano was supposed to be, namely heroic. I stood right up to him.

''What have I done?'' I declaimed. ''I'll tell you what I've done. I've freed you. I've liberated you from a fearful tyranny. I've risked my life and looks in your service, and now you can live your own lives, without that monster ordering you around. That's what I've done.''

The fux reared back on his hind legs, staring at me through his almost sightless scorched eyes. ''Freed us? Oh, foolish Swanilda-person. I am dead because of you! The other servants will see to that, and here they come!''

And he was right, right all across the board; they were coming, and when they saw what happened, that's when I got the rest of the injuries that had to be patched back together. At that I was lucky, because the fux died of his. I've had many a bad audience in my life, but never one as bad as a couple dozen human beings and nearly a hundred fuxes who had suddenly and permanently been cut off from the source of the greatest high on two worlds.



SEASONING

Hal Clement

The onshore wind had slackened, but was still strong enough to make the sturdiest bushes lean inland. The little sloop should be able to beat out against it, but Faivonen couldn't help watching. The *Fahamu* was his only link with the rest of Medea's humanity—a small population, but the only one that could mean anything to him now. Earth's billions were no longer part of his life.

Sullivan had promised to be back by midsummer, thirty Medean days from now. Faivonen trusted him, of course, since unreliable people had been pretty well combed out of the colony's leadership, but any commitment on the new world carried the unspoken qualification, "If I'm still alive." In spite of the numerous children, there were very few more human beings on the satellite than had landed two decades before. Learning as much as possible as soon as possible about the new world was admitted to be a necessity for the colony, but had been hard on individual members.

Faivonen, though his enjoyment of society had died with Riita, had not become a misanthrope, and he could not bring himself to turn his back on his vanishing friends just yet. There would be plenty of loneliness, not mere solitude, for the next couple of thousand hours, even with Beedee along.

The vessel was getting hard to see, but he could make out that she was going onto the starboard tack, after a long reach which had carried the individual figures of her crew well out of sight. The light was dim, probably dim enough to have made him give up the watch thirty years before; but the human eye is adaptable, and the human memory constantly edits the standards of what can be expected. Even though the principal suns were not up yet, their location below the horizon revealed only by flecks of hydrogen crimson from their vast halo of prominences, Castor A and B were nearly overhead. Together they provided less light than Earth's full moon had done, but it was enough to satisfy him.

"They'll clear the bay on the next tack." The voice was only slightly filtered by the speaker in the man's left ear; it would have sounded perfectly human to anyone not acquainted with the being who had spoken, who could hardly have been less so. Faivonen, without even glancing down at his arm, nodded.

"That was my guess. Are you making a linear extrapolation, or allowing for wind changes?"

"The wind will grow weaker for hours yet. Of course I allowed for that." There might have been indignation in the voice. "I have no reliable information on the currents, of course, but with no river flowing into this bay they should be simple. Are you going to watch the ship out of sight? That will waste valuable hours."

"I'll watch for a while. There's no use getting started until the real suns are up, and there's nothing to check before we go. You wouldn't have let me forget anything important, and even if you had there'd be nothing that could be done about it now."

The voice made no answer; its owner knew it had taken the man's thoughts away, to some extent, from his vanishing companions. Faivonen, however, had little else to think of for the moment. The job ahead was already planned in as much detail as possible; it was to stay alive and to learn what he could about as much of the area as he could cover—preferably, but not quite necessarily, in that order. If he didn't actually manage to stay alive, the things he learned could still be useful as long as his body and Beedee were found. It was this fact which had gripped his thoughts for the moment—the fact, and the memory it always evoked. He himself had found Beedee on Riita's skeleton; he had been searching for her, against the best advice. Success had made him for a time almost useless to himself, to their children, and to the colony. This time, he had extracted a firm promise from Sullivan: if Faivonen himself should fail to reappear to meet the ship, and it was decided that someone must go after Beedee and the information, it was not to be any of his and Riita's children. It was all right if they turned out to be explorers when they got old enough—as they nearly were, he suddenly reminded himself—but that sort of picture was too much to inflict on anyone of closer status than casual friend. The kids couldn't—

"Watch the ship, if you must, but get your mind off that line," Beedee's voice cut into his thoughts. "If you have nothing more constructive, or less destructive, to do than brood, I insist on getting started. The suns are practically up."

This time Faivonen did glance down at the object strapped to his left wrist. He knew that Beedee could not actually read minds. He—or she, or it; the man had vacillated about the correct pronoun for most of the twenty-four years since he'd first met Riita and her strange possession—could do a very good job of reading the expression of anyone it knew, however. During the twenty years of their marriage, and the year since he had found and inherited the black diamond, it had had plenty of opportunity to get to know him.

"You're in no position to insist on anything," he pointed out, as usual when one of their conversations reached this point. Beedee made the usual counter.

"Very true, but you know I'm right. We can see well enough for research. Get the rest of your equipment on, and let's start."

"I'm hungry."

"Well, you won't eat anything but cheese until you get moving. You managed to kill one meal here at the shore an hour after we landed, but nothing else has—"

"All right. Hiking is easier than arguing." Faivonen attached knife, shovel, canteen, cheese incubator, shoulder pack, bow, and quiver to various parts of his person. Then he took a last look at the *Fahamu* silhouetted against the dull red patch on the horizon where Argo had set a few hours before, turned his back on the bay, and set off up the valley.

From the sea, this had looked like a product of glaciation. No one had been surprised, since it led toward the cold hemisphere. However, there had been no sign of any stream or river flowing into the bay, in spite of the heavy vegetation which could be seen from shipboard. The plant life itself was a little startling for the latitude—eighty-six degrees north of the equator—where Castor C gave very little assistance to Argo in heating the world. When a careful check failed to show even a cove where a seasonal stream might have emptied, it was agreed that information was needed. Elisha Kent Kane Faivonen drew the job of getting it.

A few facts had been ascertained before the ship had hoisted sail. There were animals which could serve as food, and plenty of the plants whose sap would serve as culture medium for the "cheese." This was the mixture of gene-tailored bacteria which produced the half-dozen amino acids needed by human beings and lacking in Medean life forms—one of the very few products of advanced Earth technology which the colonists had retained. They had not wanted to be dependent on anything which had to be replaced from Earth, but had little choice in this matter. Terrestrial plants were still struggling to become adjusted to the satellite, and until real crops of these could be grown, people lived on native food and cheese.

Faivonen kept well to the left wall—his own left—of the valley as he travelled away from the bay. This would get the better light when the suns were a little higher, and they did have to see. Everything had to be examined: plants, animals, soil, rocks, wind, weather. The wind had been blowing onshore and up the valley for days before the *Fahamu* had reached the bay; a surface wind blowing toward the cold side of Medea was another peculiarity to be explained, though the explanation might be as trivial as the explanation of local weather so often was. Beedee had claimed a special interest in it, however, and was constantly asking the man to be held as high as possible so that its delicate pressure senses could record air currents with a minimum of ground disturbance.

Faivonen didn't object, usually. The black diamond Beedee weighed only about three quarters of a kilogram, a negligible fraction of the equipment he was carrying. Whether the thing should be called equipment or personnel was still an open question, of course; he knew it was of artificial origin, but could not bring himself to regard it as merely a computer. It said too many things which smacked of personality. Somewhere in the lattice of carbon atoms which formed the thing's basic structure was a tendency—programmed, grown, or learned—to imitate human speech mannerisms and even voices. When he had found it with Riita's body it had spoken to him with her voice . . .

They had reached an understanding on that, right away; Beedee had promised not to repeat the offense. Courtesy? Sympathy? Faivonen couldn't know, but also couldn't help thinking of the device or creature as a person, as his wife always had.

Of course, a person is alive, and living things don't operate from such simple energy sources as the flow of heat from a man's forearm to a near-freezing environment, or the potential difference between two metal bracelets with human sweat as an electrolyte. Living things, when their energy sources vanish and they stop operating, don't start up again after indefinitely long periods of time.

Beedee had been "dead" for over two years between Riita's death and Faivonen's discovery of her body. He(?) had been "dead" for over two billion years between the time he(?) had sunk with a surface vessel on the Earthlike world of his(?) makers, and the time he(?) had been discovered by Riita's grandmother on an airless planet, blistering under a red giant sun, in a pile of calcium oxide which had once been a deposit of marine limestone.

Only machines can be turned off and on, so Beedee must be *it,* not *he* or *she.* So Faivonen's experience insisted—most of it.

"Elisha! There is a fairly large animal beyond the bush—thirty meters at two o'clock. You're hungry; get ready!"

They were two kilometers from the bay, and the man was even hungrier than when they had started; his bow was bent and an arrow nocked before the diamond had finished speaking. Silently, avoiding the ankle-high puffballs whose bursting would give audible warning of his approach, Faivonen stalked toward the bush. He was still a dozen meters away when a calf-sized creature with six legs leaped into view on the far side, clearly bent on departure. He put his arrow high in the trunk, between the first and second pairs of legs. If it were like the animals he knew closer to the equator, it had no centralized heart; but a major aorta ran along its body just below the backbone. Severing the blood vessel or the major nerve cord should be equally effective. It was; the creature dropped on the next bound.

Faivonen performed a combined butchering and anatomical dissection, with Beedee recording the data. Then he collected fuel, lighted a fire with pyrite and steel, and cooked a meal. He didn't enjoy eating it much; neither the Medean flesh nor the cheese was particularly tasty, but hunger was even less pleasant.

He cut a couple of kilograms of the meat into thin strips for his next few meals, extracted the few remaining lumps of ripe cheese from the incubator's tank and put them in the storage chamber, refilled the tank with sap from the Cheddar plants he had already identified, and resumed his hike, after asking Beedee if his(?) own battery needed charging.

"Oh, no—I'm running on—oh, you're being funny. Excuse me."

It had happened before. The diamond's calculating processes, or reasoning if that was really what it could be called, operated at electronic speed; it had known he was joking long before its first word had been uttered. Nevertheless, it had imitated a human double-take; it had been playing up to his humor. Whether it had felt anything corresponding to the strange relay-chatter with which the human nervous system responds to incongruity was something Faivonen couldn't guess. Whether it *felt* at all was an equally open question.

By the time the Castor C twins were halfway around to their midday position a few degrees above the southern horizon, Faivonen was tired; even with frequent pauses to examine biological or geological data, they were more than thirty kilometers from the sea. He rested and ate again, and then settled into his sleeping bag. He knew that his own biological clock would never reset itself to Medea's seventy-five hour rotation, but sleep was as necessary as food; he slipped the blinders over his eyes and relaxed. Beedee would guard; it was unlikely that anything could approach without registering on its super-sensitive pressure sense. Guarding might be necessary; Medean predators could get no more adequate nourishment from human tissue than the other way around, but none of them seemed to know it.

This time the man was lucky, not waking up until Beedee's voice began hammering "Eight hours, Loafer," into his ear. He sat up, slipped the pads from his eyes, and looked around. The suns were almost in the south, now, just above the spot where Argo had long ago disappeared. Two balloons floated a hundred meters overhead; Beedee might not have heard them, since they always seemed to ride with the wind, but it didn't matter. No one knew much about the organisms—Faivonen wasn't even sure whether they were actually inedible, or merely had too little tissue to be worth hunting—but they were certainly harmless. At the moment they didn't seem to be moving at all, which was interesting.

"Sullivan thought the wind was getting a little weaker each cycle," Faivonen remarked. "It looks as though he were right."

"He was," agreed the diamond. "There was a pretty good chance of it when he was speaking, but there were too many unknown variables for real computation. You know, I am beginning to suspect that some of the variables lie in the shape of this valley. We'll have to get a long way inland to make sure."

"Too far inland and Argo won't be rising at all. I want no part of Coldside," Faivonen pointed out. "You wouldn't like it either. There may be a lot to learn, but with your power off you wouldn't be learning it."

''You could rig me a battery. I can think of ways you could set it up to operate even at dry-ice temperatures.''

''It gets colder than that—and you don't like being turned off any better than I'd like dying, even if you can switch on again.''

''I know. I hate to miss arriving information. Still, I believe right now that I'd like to take the chance; and I've heard you, and Sullivan, and many other people say that danger gives spice to existence.''

''I think we said life, not existence. And I know we said danger, not suicide. Forget it, Beedee; you stay with me, and I stop a long way short of dry ice even if this valley goes that far. You figure out what you can from the rocks and the weather and the life; that should be enough.''

''There is never enough. I can calculate, but then I have to see whether I was right. You should allow for that; your wife always did.''

Faivonen's silence was pointed. A human being would have been embarrassed at the faux pas, but Beedee didn't make such mistakes. He must have had—*it* must have had a reason, and it must have been a good one.

The man knew that he probably wouldn't be able to guess it. The score of black diamonds which had been brought back by the Tammuz expedition had made no secret of their composition, though the knowledge had done human engineers no good—the techniques needed to make one of the things were far beyond current human ability.

They were just what they were called—diamonds, structures of carbon with replacement atoms and crystal defects built deliberately into their lattices in ways which resembled mankind's operations on silicon chips for the last century or two—resembled them in much the same way that the circuit chips resembled a flint knife. About twelve hundred unit cells of the diamond lattice composed a single basic structural unit of the devices; a much less reliable estimate, usually guessed at about five thousand, of these units had about the recording and decision-making capacity of a single human brain cell.

The things themselves—Beedee was typical, though no two were identical—looked as though someone had made a cylinder of black glass a little over six centimeters in radius and not quite ten in length, fitted the ends with hemispheres of the same material, and split them lengthwise to make two units. With that volume—a little over two hundred milliliters—they had theoretical capacity for the equivalent of not quite two hundred million four-billion-cell human brains. Some people were afraid of them, and there had been loud demands to destroy them or get them off Earth by some of that planet's more paranoid inhabitants. It had not been entirely the high regard for private property rights characteristic of the culture of that time which had allowed Beedee to come to Castor.

Faivonen himself was no more afraid of the thing than his wife had been, but he took for granted that it could think many times faster and with far more precise consideration of myriads of variables than any human being could. It had been one of Beedee's fellow machines, or beings, who (which?) had proved that chess was as trivial a game as tick-tack-toe.

Some people had not forgiven them for that.

Faivonen didn't go back over all that, consciously. He merely wondered why Beedee had mentioned Riita when it knew the man would be pained, assumed he would not be able to guess the answer, and turned to the day's work. He cooked and consumed another meal, loaded up his equipment, and not until they were under way did he speak to his computer-recorder again. Even then he changed the subject to one of more immediate importance.

"There's still no river in this valley—"

"There could hardly be one at all, if none reached the sea," Beedee pointed out.

"There have also been no pools or puddles, though there is plenty of vegetation. I'm halfway through this two-liter canteen. Have you any practical suggestions?"

"There was snow visible at the top of the cliffs from the sea. The temperature here is distinctly above freezing. Some water should flow over the edge, if only occasionally. Let's examine the base of the cliff more closely; the geological information will be useful in any case."

Faivonen refrained from comment, and started toward the nearer side of the valley. They had already learned that the valley had been cut in sedimentary rock—a fine sandstone—whose present elevation above sea level implied much about the tectonic forces available on Medea. There was rubble, inevitably, at the foot of the cliffs. Near the bay, this had been deposited so as to give a U-shaped contour to the valley, leading the explorers to assume former glaciation; closer examination had revealed only very fine material which appeared to have been wind-borne. This far from the bay the roundness persisted and was even exaggerated; the cliff, on this side at least, seemed slightly undercut.

Away from the walls, the soil was a fine-grained loess. Closer in, it contained rocks whose size increased with decreasing distance from the cliff. Exposed portions of the rocks were well rounded by some form of erosion.

The soil itself was very dry, in spite of the abundant vegetation. The man had dug up several of the smaller plants, and found that their root systems did not go particularly deep; Beedee had agreed with his conclusion that there must be a fairly frequent supply of surface or near-surface water, since the plants themselves showed nothing unusual in the way of liquid storage capacity.

The diamond, as usual, was right; the soil was detectably moister near the cliff, and part way up the slope they found occasional shallow puddles where the rocks had made dams to hold them. With a good deal of relief, Faivonen took the first long drink he had allowed himself since landing, and refilled his canteen.

He was in a better humor now, willing to go on further toward the cold. His garment was another bit of Earth technology which had been kept for special uses, a coverall of thin polymer whose thermal conductivity was extremely low, though it was quite transparent to near infra-red radiation—he could appreciate the heat of a fire or of the Castor C twins without having to take off anything to let the light in. With a headpiece like an ancient skiing mask, he would be able to face air temperatures well below the freezing point of water, even with fairly high winds. Dry-ice temperatures would be something else, but it should take many days of foot travel to bring him anywhere near that sort of environment.

He chatted good-naturedly with Beedee as they resumed their way up the valley, slanting back toward its level floor where walking was easier. The discussion was almost entirely about the facts they were observing—the diamond was seldom willing to play human to the extent of indulging in gossip or idle chatter—but it included much speculation. What had elevated this entire region of sedimentary rock practically as a unit for more than five hundred meters? Beedee had made several dip measurements where the exposure permitted, and nowhere found more than two degrees. What had cut this canyon, if not a river or glacier? and if it had been a river or glacier, why was there no trace of it now? Valleys without central streams are most unusual except the ones in deserts—and even those usually have empty stream beds where water once flowed.

The two balloons had drifted *down* the valley—the wind had finally reversed, instead of merely slowing down. Could this be a tidal phenomenon, as Sullivan had guessed as they were approaching the region in the *Fahamu*? Beedee agreed that it could be, but declined to risk a prediction.

''If this is really a tidal current in the atmosphere, and is being funneled into this valley from both ends, the width of the valley itself, the height of the walls, and the size of the feed areas are all relevant. At the sea end the supply reservoir is effectively infinite, but we have no observations about the other factors. Guessing that the canyon keeps its present width and height for its whole length is pointless as long as I don't know the length or the other variables. I can treat it mathematically as an organ pipe of rather unusual cross section with a forced input of one Medean day's period, but—''

''Forget it.'' Faivonen was a perfectly good mathematician as human beings went, but knew the futility of trying to follow Beedee's brute-digital-force ''estimates.'' ''You keep your ideas inside, and we'll check their accuracy as we get farther up the organ pipe. Isn't that a new plant?''

''Not really. It's quite common on some of the islands near the equator. It is the first time I have seen it so far north. Of course latitude means much less than longitude here as far as climate is concerned.'' The last sentence came after a slight pause, as though it were an afterthought.

''Yes, *I* keep forgetting. It was very tactful of you to talk as though you forget too, but I don't really need that kind of coddling. I know what your brain is like.''

''Does it offend you? I have noticed that most human beings seem more at ease when I use such conversational artifacts.''

''Well—no, not really. Just don't ever let it waste time if we're in trouble.''

''Of course not.''

Whatever Faivonen may have thought consciously of Beedee, his feeling toward the thing was essentially ordinary friendship. It was a personality. It was even a person. Their running conversation might almost have been taped at a dining table during a scientific convention; and for the first two Medean days it was little more exciting than dining table talk. The only complications arose from the endless phase problems between Faivonen's twenty-four hour cycle and the satellite's seventy-five-plus hour rotation. He had to waste waking hours at ''night.'' The white suns and the continuous aurora gave enough light to permit travel when the orange suns were below the horizon, but the man and the machine were both reluctant to do this. Seeing was poor enough to give a high risk of missing important data, a possibility which bothered Beedee even more than it did the man. Gathering and storing information was the diamond's prime motivation—its equivalent of hunger, thirst, and libido combined.

On the third day, Faivonen was awakened early from his morning sleep by Beedee's voice in his ear.

''Elisha! Something is trying to creep up on us very silently! Have weapons ready.''

The man snaked out of his sleeping bag as quickly and quietly as possible. ''How far away?'' he asked, wondering whether bow, axe, or knife would be most appropriate.

''I cannot tell the linear distance, since I don't know how much sound energy it is producing. If it maintains its recent average rate of approach, it will arrive in about one hundred seconds.''

Faivonen was on his feet by now; he nodded, seized the bow, and nocked an arrow. ''Direction?'' he asked.

''Four o'clock from where you're facing now.'' The man whirled to his right. Nothing was yet visible, but there were many shrubs up to three meters in height which blocked the line of sight. He could not hear anything yet; the hard-packed soil was almost completely covered with the bladder-covered, mosslike growths which filled the ecological niche of grass over much of Medea's surface, and even a very heavy animal would have made little noise.

Argo was just rising, and its dull red disc, rimmed on the upper left by the brighter crescent where the twins lit its farther hemisphere, provided a blood-tinted background against which the newcomer should be silhouetted any moment. Faivonen wondered whether the creature were following his trail, or had simply winded him—the air tide, if it were actually that, had gone much more negative during the last couple of cycles and blown a stiff breeze down the valley toward the sea. This had fallen in the last few hours as the fire-planet rose, but could still be carrying the human scent to anything down-valley equipped to detect it.

"It's stopped. It's only breathing now," Beedee said suddenly. Faivonen lifted his bow, and drew the arrow part way back. Some of the Medean predators could leap many meters—

This one didn't. It suddenly came into sight to one side of a large bush, running toward him at high speed. It was moving too fast, and the back-lighting was too poor, to let him count legs or spot other details; but research didn't occur to him until later, anyway. He drew the shaft back the rest of its length, aimed as best he could in the second or two available, and loosed. The creature swerved slightly, knocking him off his feet as it brushed by him. It must have had twice his own mass. He struggled back to his feet as rapidly as his muscles would permit, dropping his bow and drawing his machete.

"Relax. It's still running. Your arrow is about half-shaft deep in a front left shoulder; you hurt it badly, perhaps killed it."

"Any other details?"

"It was a species of lancer, the largest I've seen. It had a radula—the toothy-tongue arrangement they all have—and it was running with tongue extended. If you had missed with that arrow, the tongue would have hit your throat and left very little of your neck. I thought of telling you to dodge, but it was obvious that your reaction would have been very much too slow."

"And it's still heading away from us?"

"Yes. I see no likelihood of recovering your arrow."

"That wasn't quite what I was thinking about."

At least, the incident killed boredom for a time. The diamond claimed not to understand this, pointing out that if Faivonen had been killed he would have attained ultimate boredom. Faivonen failed to see any humor in this, but couldn't help wondering whether Beedee were actually trying to display some such human emotion. He put a leading question.

"Do you really want all your predictions fulfilled and your calculations correct? I've heard you say that your fun consists of checking your figures against observation. Isn't it sort of—well—deadening if you're right all the time? Life needs some kind of spice."

"I assume you speak figuratively, if the word you just used actually refers to the taste-only foods you left on Earth. I am aware that no research can be done without a little risk, but fail to see how adding to the danger improves the taste, if that matches your figure of speech, of learning or discovery."

"You're just trying to make yourself sound more like a machine," retorted Faivonen.

"Gambling should obviously be saved for the time the odds are with you. My knowledge of human gamblers is limited, but manipulating the odds in their favor has always appeared to be one of their standard procedures."

"Those weren't gamblers. Look—you've just won a bet, since your existence is tied in with mine. If you don't get a kick thinking about that, you're just not alive."

"I have never claimed to be alive," was the diamond's rather overwhelming answer. "Thank you for forgetting."

Faivonen could think of nothing to say.

There was no more night, even the brilliant night of aurora and the white Castor suns. The trip had started at the equinox; four Medean days later, sunrise and sunset points had met ahead of the travellers. The Castor C twins were in the sky for the rest of the journey; they would not set for thirty of Medea's revolutions around Argo. This at least resolved the question of whether or not to travel at night.

No more attacks were experienced in the next few days, and boredom again began to threaten the morale of the human member of the exploring team. On the seventh day he felt the need to do something about it.

Beedee, with its precise visual sense, had measured the distance they had travelled, mapping the valley as exactly as the human race was ever likely to find necessary. They were now just over five hundred and fifty kilometers from the bay as the balloons travelled—as many of them did. The winds were increasing in speed both ways, and more and more of the organisms were apparently getting swept into the valley. The down-valley winds, back toward the bay, were less intense and shorter in duration than those blowing from behind the travellers, but a change in both qualities was becoming evident as the days went on.

"Beedee," Faivonen remarked as he finished a breakfast during the seventh day, "I'm getting a little tired of waiting for something to happen. I was inclined a couple of days ago to liven things up—season this meal of knowledge you find so tasty—by making a bet or two with you. Then I couldn't think of anything either of us could use to pay off with; but I just have. The only trouble is that I'm not sure any bet could be really fair, since you can calculate things so much better than I can. Still, it's worth trying, if you'll tell me the truth."

"Trying what? Why should I tell you anything but the truth?"

"To the latter, I don't suppose you would; it would demand human characteristics you claim to lack. What I want to try, as I said, is a bet. For example, I've been wondering about those balloons—they're being carried farther toward the cold side than back this way by the winds, so far. If they get there, it's hard to see how they could do anything but freeze. We could bet on how much frozen balloon there is in the glaciers we both believe are a few hundred kilos long, with the uncertainties being things like natural methods of escape which I haven't been able to think of.

"Or we could bet about the winds, which we both think are affected both by the season and the tides. How intense will they get by, say, the third noon from now? I can only extrapolate roughly, and you say your calculations wouldn't mean anything without data on the shape and length of the valley and the area beyond which feeds wind to it."

"True. My set of possible solutions so far is so broad that any one of them would qualify as merely a guess. Yes, we could bet on that; but what possible currency could we use?"

"If I lose, we go fifty kilometers farther than the point where my judgment says we ought to start back. You will collect that much more knowledge."

"A very tempting offer. Will you state in advance the criteria on which you would base that judgment?"

"Don't you trust me? I can give you several, actually, but can't guess which might happen first or demand highest weight. For example, if we went twenty hours or so without finding a food animal, I'd certainly think about return. If wind-chill got too close to the lower limit at which this suit could keep me alive . . ."

"But if we went beyond those points, you might die. Those are the same sort of factors which would make *me* recommend turning back."

"Well, that would be just another bet. If I didn't survive, you'd still be found some time, so you'd be the winner again."

"I don't want to be turned off, even temporarily. I wouldn't regard it as a win."

"And you won't bet?"

"No. What are you trying to arrange? You haven't suggested what I should pay you if you win. I have never heard of a gambler who didn't give that factor his prime concern."

"I told you—you've never met a real gambler. I'd be content with being right in a dispute with you. Didn't Riita ever challenge you to anything like that—both make predictions, and see who was right?"

"I thought you didn't want to discuss her with me. It seemed to cause you grave emotional distress."

"This is not a discussion. I simply asked a question."

"Yes, she sometimes tried to outguess me about what was to happen, but she never made a formal challenge of it."

"Well, I want to."

"I get the impression that you are trying to confuse me. The set of possible explanations—or rather, the set of explanations I can think of—for your action is larger than the set of possible solutions to the problem of the valley wind."

"I have thought of something you could pay me. Just stop with those artifacts. The correction in your choice of words was intentional; you had planned that sentence long before the first sound wave came out of the speaker."

"You said that this did not bother or annoy you."

"It's beginning to. It reminds me, each time you do it, how much faster your brain works than mine does."

"Then I will stop. No bet is needed."

"Thanks—I guess. Well, I'm making a prediction anyway. I say that the wind coming down this valley at noon on the third day from now will have a speed greater than seventy-five kilometers an hour. Do you agree?"

"That is very close to the median of my set of possibilities."

"What's the median?"

"Seventy-seven point one four."

"All right, I say it will be higher than that—or do you want to take the high side?"

"I see no basis for a choice. Let it be as you say. I will not, however, hold you to the pledge of extra distance if you turn out to be wrong."

"You can't stop me from paying off if my conscience demands it," pointed out the man.

"You mean you are doing all this to remind both of us that you control all our actions? It seems silly."

"I hadn't thought of that. Thanks."

"I wonder if that is really true."

Faivonen made no answer, though the diamond's remark startled him considerably. He fell silent, and gathered up equipment in readiness for the "day's" next hike. The suns circled the horizon, hiding first behind one set of cliffs and then the other.

Some ninety hours later the trip became interesting again without the aid of bets. Over a space of about two kilometers the hard soil of the valley became first slightly damp, then quite wet, and finally coated with frost. The man's first thought was radiation cooling, even though there had been no real night. Then he noticed that the frost extended about equally far on both sides of the valley, and part way up its walls, as though something had come down to this point to chill everything, and then retreated. The fact that frost crystals grew as deeply on the underside of branches and overhung rocks implied the same; things had cooled by some other process than radiating to the sky.

"This is a good one," Faivonen remarked aloud. "Any ideas?"

"Of course," replied Beedee. "This fact has narrowed my set of possible solutions by more than ninety-five percent."

"Where does it leave my bet?"

"You are well ahead. You are also in about fifty times as much personal danger as I had estimated."

"How bad is that? You mean we should turn back now?"

"I should be able to give you warning. Actually, the estimate remains grossly unreliable in view of the unknowns in the physiography ahead of us. If you are willing to face the risk of learning more of the pertinent facts, I most certainly am."

"But what caused this frost? And why is it taking so long to melt, even with the suns shining on it?"

"Before I answer that question, I must ask you one—one which involves your wife. Do you object?"

Faivonen hesitated, then said, "Go ahead."

"It was her very clearly expressed wish that I not solve a problem for her which I believed she might reasonably solve by herself. She may never have told you in so many words, but she did not wish to become dependent on me; she felt some guilt about bringing me to Medea at all. She fully supported the policy that you colonists should not be or become dependent on anything they could not produce here. If you share her policy views, I cannot answer your question. I know you have enough data, and I think you have enough reasoning power, to solve it yourself."

Faivonen thought silently for several seconds. He was willing to take on the problem himself—it would help fight the boredom of pure fact-collecting. He was less sure, however, of the general policy suggested. Beedee, in spite of the need for independence, was highly important to the colony; it carried most of the data so far accumulated about Medea in its memory. Some of the group had objected to letting the device go out on exploring trips, yielding the point only because so much better quantitative information could be obtained through its senses. Several of the *Fahamu*'s crew had been clearly more concerned about the machine than about Faivonen, when they left the ship

If, as Beedee had just said, the danger was now greater, perhaps it would be better to turn back now and get the information so far gathered back to the colony.

On the other hand, as he was quite sure the diamond would claim, what they had learned already would be greatly multiplied in value if more were learned in this area; the local meteorology, especially, would provide clues to the cold-side conditions which might take years to gather any other way or from any other place. It was not just a matter of Beedee's burning thirst for information; Medea's weather, and still more its climate, could be very literally matters of life and death for Medean humanity. There was no way of getting knowledge without risk, and knowledge itself was life.

"All right," he finally said. "I'll figure it out myself. Let's go on." Beedee approved briefly.

The suns were slowly melting the frost from the branches and leaves of the bushes, but were making much less progress with the coating on soil and rocks. The presumption was that the latter had been chilled to a considerable depth, which in turn suggested conductive rather than radiative loss of heat; beyond this, for the moment, Faivonen could not get. The only change made by ten kilometers of travel was a thicker frost, with some evidence of snow as well—piles of feathery crystals which had apparently blown into sheltered areas by wind coming down the valley, and then, strangely, had had frost crystals grow on top of them. The distinction between the material which had blown from elsewhere and that which had grown in place was quite definite, according to Beedee, and Faivonen himself could see it.

He could not see the physical situation which would produce such a phenomenon. There had been no clouds even a few kilometers down the valley; it was hard to see how snow could fall without them. On the other hand, it was hard to see how radiation cooling sufficient for frost could occur if clouds were present. A brief snow shower, possibly, followed by a quick clearing, would explain things after a fashion. It did not explain, however, why he and Beedee had seen nothing of the shower. Such a phenomenon should have been part of a travelling system—a weather front, and why such a thing should have stopped and retreated, or died out after coming within a few kilometers of the last camp was hard to see. There had not been a cloud; all that either of them had seen in the sky since the suns had stopped setting had been the balloons.

These had been floating in ever-increasing numbers, sometimes back toward the bay, sometimes passing the explorers on the way toward the cold side. The tides, if the valley winds really were tidal phenomena, still seemed to favor motion away from Argo.

The creatures seemed to be drifting lower each day. A hundred hours ago some had been only a few tens of meters up; now many were practically skimming the frost. It occurred to Faivonen that he might actually catch one of the things by its trailing roots, or tentacles, or whatever they were. Then it occurred to him that the converse was also true. However, he refused to worry, as usual.

''I suggest,'' Beedee cut into this line of thought, ''that we examine some of the clefts or chimneys in the cliff. We might get more evidence about the nature of this strange heat sink.''

''All right,'' agreed the man. ''While I'm climbing, you might look out over the valley for animal life. We're short of meat, and I can't live indefinitely on cheese. I can't help wondering whether this freeze may not have driven the local animals away, or into underground hibernation, or something like that.''

''A good thought,'' agreed the diamond. ''It would be a pity to have to turn back just as data are starting to cut down the possibilities to a really manageable set. I predict that the valley will at least double its width in the next ten kilometers.''

''I'll go that far without any food, if you're that near a solution. But let's check this chimney first.''

The feature in question was a fairly typical crack, ranging from one to two meters wide, in the cliff wall. It appeared to start at the point where the rock itself became nearly vertical; probably it went lower, but was hidden by the rubble which formed the rounded base of the wall. A climb of nearly a hundred meters was necessary to make the study they wanted.

The climb took only a few minutes. The numerous projecting rocks which served as steps were worn very smooth, presumably by blowing dust or sand, but were so firmly buried in loess as to be completely safe. With frost crystals crunching under his feet, Faivonen took a zigzag path to the bare rock; from that point he was able to follow a shelf where coarser and evidently softer sandstone had been eroded away, straight to the chimney itself.

The examination was brief; the crack was almost solidly choked with frost.

"Not radiation cooling," Faivonen remarked categorically.

"I agree," replied Beedee.

"You know what did it." The man's words were a declaration, not a question.

"I believe I have a unique solution for this aspect of the problem."

"And I should be able to find the same one."

"You should. All pertinent data are available to you."

Faivonen thought deeply as he picked his way back down to the valley floor and headed up the valley once more, but failed to come up with any solutions, unique or even believable. Increasing hunger finally diverted his attention from the problem.

"Did you see any animals while we were up there?" he asked the diamond.

"None, nothing moving in any part of the valley I could examine. I did not mention it because you said you would go at least ten kilometers farther anyway."

"Thanks. What do you think the chances are of finding them in this frozen area?"

"I have not enough information for a reliable estimate."

"Could these animals survive the conditions which you believe caused the frost?"

"Not by any special physiological machinery we have found in them. Such techniques as hibernation would involve biochemical factors not obvious to gross examination, of course."

"Could I survive those conditions?"

"No."

"But you can warn me in time to escape them."

"I believe so. There are variables—"

"I know there are variables, blast you. Are you walking me into something I'd have to catch a couple of dozen balloons to lift me out of?"

"That number would be insufficient, and you might have trouble securing their cooperation—"

"Cut it out! You know perfectly well when I'm being figurative!"

"I am never certain about it. Your wife was much easier to judge in such—"

"Shut up!"

Faivonen strode on in silence for two or three kilometers. After the first five minutes or so, he realized that Beedee had done a competent job of changing the subject on him, and he still didn't know how much risk he was taking; but he didn't see any use going back to the matter, and he felt reasonably sure that the diamond would not take really serious chances with its own transportation. Gradually, he cooled down to the point where he could pay attention to his business once more.

The frost was slowly vanishing from the near side of the valley, under the rather unimpressive glow of the twin suns—a glow currently reduced by the fact that one of them was eclipsing the other. Argo, the real heat source for its satellite, was too low to help even if a slight turn in the canyon, some scores of kilometers back, had not blocked its radiation from the valley floor anyway.

When he finally spoke to Beedee again, it was not about personal risks.

''How much useful information do you really think we can get by going, say, a hundred kilometers farther, if that is possible?'' he asked. ''We have a good idea of the local geology—at least, as good as we can get without drilling—and an even better one of the biology and ecology. Of course, any additional information is always good—I go along with you on that, even if I don't have your burn for detailed knowledge—but aren't we maybe getting to the point where what we've already learned should be brought back and reported?''

''In those fields, perhaps yes,'' was the answer. ''However, the meteorology still baffles me seriously. We really must learn more about the atmospheric tides which I believe are controlling so much of what goes on in this valley. If I can work them out in detail, I believe we can infer more about the physiography of the cold side of Medea than could be learned by many hundreds of man-days of surface mapping even if men could venture there. I consider it vital that we go on for a while yet.''

''Regardless of risk.'' It was not a question.

''Not entirely, of course. I will do my best to keep you well enough informed to get us back safely, though like you I accept the fact that research entails risk. After all, while I was quite certain that you would come looking for your wife and therefore would find me, I am not nearly so sure that anyone would—or could or should, in this part of the world—come looking for you.''

''They'd surely come for you.''

''I doubt it. Sullivan would be the most strongly tempted, but would certainly not leave his ship. I would not be willing to bet my consciousness on the chance of anyone else on the *Fahamu* coming, even if Sullivan were willing to work such a trip into the ship's schedule. I am as strongly concerned about your safety as I was about—'' The machine's voice broke off.

Faivonen knew what the missing word would have been, just as well as he knew that the interrupted sentence had not actually been a mistake; it was another deliberate action by the diamond. He decided not to play up, this time.

"All right. We'll go on for at least twelve hours, unless you warn me back. Keep your senses tuned up for animals, please. The food situation is getting a little tense."

Beedee acknowledged the request, and another score of kilometers were traversed with little worth noting except the melting of most of the frost and the fulfilling of Beedee's prophecy concerning the width of the valley. They finally stopped for rest. There was nothing to eat but cheese, since they had seen no animal life, but he lit a fire anyway and, with some trouble, dug a shallow sleeping pit in the not-quite-frozen ground. The wind was starting to strain the performance of coverall and sleeping bag; balloons were now sweeping by them from behind at running speed, at times bouncing against bushes.

"Do you suppose it's the low temperature that brings them down this far?" the man wondered aloud.

"Not for simple physical reasons. A given mass of hydrogen or other light gas would have the same lift in a given atmosphere at any temperature. The balloons do not seem to have shrunk, and a temperature drop for a given *volume,* if shared by the surrounding atmosphere, would increase the lift. Of course, if the creatures can alter internal pressure by muscular contraction of their sacs, or do something to raise internal temperature, the set of possible responses is greatly enlarged. A detailed examination of one of them would be interesting and useful."

"Hasn't anyone done it already?"

"It has not been reported to me. The creatures seem to have been given a very low research priority after being found inedible. I would not have approved, myself, of such an evaluation."

"Naturally not. Well, we'll fit that in if we can. Stay on your toes; I'm going to sleep for a few hours." Faivonen slipped the blinders on.

He woke up five or six hours later, unpleasantly chilled. Keeping as low as possible behind the low pile of soil he had excavated—the wind was not strong, but very noticeable—he placed most of the fuel he had stacked beside his sleeping pit to help break the wind on the remains of the long-dead fire, and lighted it. When it blazed up he rose to sitting position to let its radiation reach more of his body; and as he did so, Beedee's voice—no, it was Riita's voice!—suddenly sounded.

"Elisha! Get to the cliff and start climbing at once! Waste no time!"

Being human, Faivonen did waste a little time. He reached for the equipment he had discarded on lying down, which cost him a second or two; as he ran toward the nearby valley wall, still fastening gear about his person, he looked up the valley and almost lost several more.

Some kilometers away—he could not judge more precisely—an almost featureless white cloud was bearing down on them. It spread low across the valley from wall to wall. Its upper surface was sharply defined, but he could see for some distance into the lower portion. Its height was somewhat under half that of the canyon walls.

From ground level he could not judge its speed, but had a strong impression that it was approaching rapidly. Beedee's evident opinion that it was dangerous could probably be trusted, anyway, and Faivonen ran his hardest.

It was only a short distance to the point where the wind-rounded rubble began to slow him down. It also, very shortly, brought him to a height where he could judge the distance and speed of the menace for himself. Neither item of information was encouraging. He saw little chance of getting above it before it reached him, but he had no idea of giving up and spending the time before it arrived in thinking up reasons why it was probably harmless.

Details became clearer as the thing drew closer and the man climbed higher. He remembered seeing something like it in a museum on Earth, in a wave demonstration tank where two immiscible liquids sloshed back and forth. He remembered the crawl of the denser fluid along the tank bottom as the container slowly tilted, and how the lighter material was forced up and out of the way.

He remembered pictures of a similar situation which he had seen later, when he was studying meteorology—the cross section of a cold front . . .

And suddenly he realized what it must be, and redoubled his climbing effort. Cursing his own shortsightedness could come later, when the breath might be available.

''Beedee!'' he panted, ''I suppose this was your solution. I take it you didn't call the time quite correctly.''

''It is. I couldn't. The region beyond our sight must broaden into a bowl in its general arrangements, but I have no data on the bowl's size. Hence, the sloshing of the dense gas under tidal influence has a natural period which I was unable to calculate, though the observed changes in the valley wind eliminated many possibilities. There must be funnelling effects at various places along the valley, and these were quite impossible to calculate. There must be some critical time, as spring advances, when the contents of the bowl not only pour for some distance down the valley but actually start a siphoning effect. I trust this is not the time. When that happens, there will be a high, uninterrupted wind of carbon dioxide all the way to the sea—no doubt the cause of the peculiar erosional features we have observed from the beginning.''

''I guessed about the CO_2 when I saw how sharp the upper surface of the gas river was. It's the coldest cold front anyone ever saw—''

''Don't waste your breath in speech. You seem to have analyzed the situation correctly, but you will have to get above that gas surface or drown. You probably see now as well as I do how the thing formed in the first place, but this is not the time to discuss it. Climb!''

''All right. Just don't use Riita's voice again, no matter how urgently you want my attention.''

Beedee made no answer to this, and Faivonen continued up the steepening slope, still snatching occasional glances at the approaching river of frigid gas. Its boundary was clearly marked by the water it froze out of the air it met. Tiny snowflakes settled through it, giving the mass a foggy appearance from a distance. The upper surface looked sharp mostly because the man's line of sight was nearly parallel to it.

It was also marked, he saw as it drew nearer, by larger specks which he finally realized were balloons. Their bouyancy, as he and Beedee had seen, was for some reason low enough to let them reach the ground in ordinary air, but they floated on top of the carbon dioxide to emphasize the outline provided by the snow.

Looking back and down, in the brief instants he dared do so, he could see the creatures being scooped up as the front reached them. They looked as helpless as he was beginning to feel. His arms and legs ached, his breath was scratching at his throat, and his heart was pounding. He was tempted to drop some of his equipment, but it was already at the minimum likely to keep him alive if he got through the present jam.

The front at the valley floor level was within a kilometer of his camp—farther back, thank goodness, at his present height—it had a shallow slope; every meter he climbed was giving him more time—that would be a good calculus exercise—no, waste of time, Beedee must have it figured out already except for a few variables involved in the terrain he was trying to climb over—it was funny what a person's mind would do when it wasn't being put to important work.

Now the ground-level leading edge of the front had passed below him. The valley to his right was floored with a foggy whiteness which became sharper and more opaque as the eye followed it toward the horizon. The top of the snowstorm was climbing toward his feet, the site of his camp disappearing through the thickening precipitation. The fire had vanished between two breaths; its only trace was a vague patch of smoke which had been lifted like the balloons and was spreading into invisibility as it rose toward him.

"Elisha! To your right—ten meters—a chimney. Get into it!"

"Why?" Faivonen slanted in the direction mentioned, even though the reason was not yet clear to him. "It will fill with gas as quickly as the rest of the valley, and there's no reason to suppose I can climb any faster there."

"You probably can't, but I sense turbulence at its edges. The gas is mixing with air there, and should remain breathable longer. Try it. As I read the currents where the front has reached it lower down, there must be good air being forced up from below inside the crack."

Faivonen didn't see what he could lose, and where hand- and footholds permitted a choice he favored the way toward the opening. He was by now well above the talus, and climbing bare but greatly weathered rock. As had been the case farther down the valley, occasional layers of softer sediments had eroded more rapidly to provide shelves and steps; the climbing was not essentially difficult, but hoisting his eighty kilograms of self and equipment even with good footing at the speed which seemed necessary called for a high power consumption.

But climbing inside the chimney would be too slow, though he knew the techniques well enough. Beedee saw this, once they were able to look in, as quickly as the man did.

''Stay as close as you can. There'll be oxygen for longer. Another fifty or sixty meters will get us out of danger anyway.''

''I—''

''Don't talk! Keep quiet and climb! I'm talking so you won't. Listen all you want, but if you disagree with me keep it to yourself until later. I just remembered another factor; I wish I could evaluate it numerically. The gas lake feeding this river must not only be sloshing under tidal influence, it must also be expanding thermally as spring advances. It's getting deeper, and would overflow down this valley, I judge, even without the tides. The diurnal variation in solar heating would have the same frequency as the tide, of course, but probably not the same phase—a really interesting new family of variables—''

Faivonen glanced back and down, which was what Beedee had been hoping to forestall. The snowflakes were very close below.

''Twenty more meters should make us relatively safe. There's a good ledge there—''

Cold suddenly bit through the coverall. The rock seemed almost hot by contrast, and he was tempted to press against it and stop climbing. The air coming into his nose felt like fire, and he pulled his mask completely over the lower half of his face. The chill may have helped save him; he could feel the urge to breathe faster as the gas reached his blood, but the pain drove him to inhale as slowly as possible. Hyperventilation, especially in Medea's oxygen-rich atmosphere, could have cost him his physical coordination.

There must be some mixing; he was holding on to consciousness, so there must be enough oxygen—or nearly enough; there was a curtain of darkness twisting about the edges of his field of vision. Beedee was talking again, giving very precise directions where to put his hand, and then his other hand, and then one foot, and then the other . . .

His vision cleared. The snow was below him again, and he could breathe without pain. He was on a ledge a dozen meters wide, three body lengths above the haze of ice crystals which marked the surface of the gas river—marked it far less sharply than it had seemed to do at a distance. He asked the obvious question.

''Will the gas get any higher, and will it get blown back up the valley before I starve?''

''No higher, as nearly as I can estimate, as long as it flows in this direction. A wind strong enough to reverse it would force it above our level.''

"I see no way to climb higher, except the chimney. I'll have to rest a while before tackling that."

"This shelf does not reach the chimney. You'd have to climb back down into the gas to get there."

"Maybe the level of the gas lake will go down, if enough spills out through the river," the man hoped aloud.

"Maybe. I have no way to estimate its volume. It seems obvious that it is fed by glaciers of alternating layers of water ice, which can flow under sufficient pressure even at farside temperatures, and dry ice, deposited in alternate seasons. No numbers are available, I fear."

Faivonen got wearily to his feet; there seemed nothing to do but make sure whether there were other ways off the ledge. Fifteen minutes later he settled to the same spot, even more wearily. There were no ways up, and those down all led into the gas.

"Well, Beedee, I guess I can only wish you luck. Maybe someone will come by in a few years looking for you. I just hope it isn't one of the kids."

The machine responded only to the first sentences.

"Perhaps you could improvise a cell to power me and keep me conscious until then. You have several metal objects in your possession, and if you strapped two pieces of different composition on my round and flat faces respectively, using a strip of leather from one of the balloons, there should be an adequate potential difference. Natural moisture in the tissue should provide electrolyte, probably to very low temperatures—it would be far from pure water. You should try before the balloons blow off the shelf."

Faivonen had paid no attention to the half dozen of the creatures which had apparently been blown into the relatively calm area of the shelf. Even though they were big—some of them over two meters in diameter—it would have taken dozens of them to support his weight even if he had trimmed off their excess tissues and left only gas bags.

"You do want to do a bit of gambling, then? I told you it was the spice of—let's call it existence, since you don't claim to be alive."

"I don't see it as gambling; I am merely trying to increase my odds of remaining able to observe. You said that wasn't true gambling."

"So it isn't. All right, I'll do my own gambling. There's a bush farther up the cliff, between us and the chimney. I have twenty meters of line, and a climbing grapnel. If I can hook to the bush, I can work across to the chimney with the rope carrying our weight."

"I noticed the bush. It is twenty-seven meters from the nearest point on the shelf."

"Then let's use leather, if you can call it that, from the balloons to lengthen my line."

"I doubt that it could be strong enough; lightness must be its primary quality."

"Right. *That's* what I call gambling."

He rose and approached the nearest of the balloons. It was obviously alive—the rootlike tentacles were moving, apparently aimlessly. It showed no obvious awareness of his approach, and did not react even when he stepped within reach of the tentacles and poked it experimentally with his machete. The gas bag was rather taller than his own height, thin enough to be translucent, delicately tinted pink and orange. The vital organs, if they could be called that—no one was sure if the things were animals, plants, or something entirely new—were clustered in a structure about the size of a human head at the lower end; the roots radiated from just above this, at what Faivonen couldn't help thinking of as the Antarctic circle.

If the thing were really animal in any sense, however, it seemed to be unresponsive—perhaps because of the cold, the man thought. Deciding it was safe, he squatted down and examined the "head" closely. The roots continued their aimless writhing.

After close examination which told neither of them anything useful, he dissected the central mass rapidly, letting Beedee see everything he did. The organs, their shapes, and their arrangement conveyed no meaning to either of them, but helped satisfy Beedee's insatiable thirst for information. There was no obvious relationship with any other Medean life either had seen. The balloons might be a kingdom of their own.

The tissue of the deflated gas bag was as flimsy as the diamond had predicted, but Faivonen began cutting it into long, thin strips. Rope-making would be a long job, but he had no intention of sitting idly waiting to starve.

"You will have to make the cord as far overstrength as we can estimate," remarked Beedee. "It is unfortunate that there is no adequate means of testing it before completion. How long do you think you will need?"

"Probably too long. I'm hungry already, and there isn't much cheese."

"We should have started sooner, but I could not calculate all these events accurately. I fear our lack of data has cost another human life, though I tried to avoid my earlier mistake."

Faivonen snapped a startled question. "You mean it was a situation like this that caused Riita's death?"

"Not exactly, though her problem involved the use of the balloons. There were human emotions involved which I had not evaluated properly, long as I had known her. She refused to kill any of the creatures, which could have been put to effective use, when I told her they were intelligent. I was more careful this time, fearing that you might react in the same way."

Faivonen fought off an urge to retch. "I certainly would have. How do you know they are intelligent? Are you sure?"

"Of course. The motion patterns of their tentacles and the changing colors of their gas bags are repetitious, and seem to correlate with their actions in rising and sinking. I have been watching relays of messages going up and down the valley from one of the creatures to the next."

"Then they can see? We didn't find anything like eyes in this one."

"A very interesting problem, I agree."

Faivonen fell silent, and thought for several minutes. Then he removed and opened his shoulder pack, groped through its contents, and pulled out several pieces of metal.

"You're giving up on your gamble?" asked the diamond.

"Not exactly." Faivonen said no more. He selected two of the metal fragments, and cut a long strip from the gas bag, five or six centimeters wide. Then he removed the straps which held Beedee to his wrist, placed one piece of metal against its flat surface and the other on the curved one, and wrapped the skin around everything. He left the rounded ends of the machine, where its eyes and pressure senses were located, clear. Then he cut several much narrower strips and used them to tie the "bandage" in place. The package seemed secure.

"Current flowing, Beedee?"

"Adequately, thank you."

"Good. I've noticed that there is a breeze at our level coming from down the valley, while the gas river is still flowing in the opposite direction. Any explanation?"

"Certainly. The gas is siphoning—enough weight has flowed down the valley to maintain the current. The last time it got to the point where we first met the frost, and then was forced back by the tidal wind; this time it's set for the season, I judge. What we feel is the regular wind, riding over the carbon dioxide."

"So the gas river will flow for several weeks."

"It seems likely."

"And I can't get away."

"I don't see how."

"All right." Faivonen picked up the diamond and approached another of the balloons, now shifting a little in the rising wind. With more strips of skin, he bound the package to one of the thicker tendrils, still taking pains to leave the diamond's sense organs unobstructed. Then he stood up and looked down at the glassy half-cylinder for several seconds.

"Nothing personal," he said at last. "You put my wife in a situation which would kill her unless she changed her personality. You've done the same with me. Perhaps you aren't guilty of killing us—those human quirks you've mentioned, which are good for species survival but not for individuals, are probably doing that—but I don't choose to quibble. If my kids ever come looking for me, I don't want them to find you."

"The balloon won't support me." Beedee's voice was fainter, but quite audible.

"It will support you in carbon dioxide. Try calculating which wind will carry you. I'm betting on coldside—you wanted to see it anyway." Faivonen pushed the balloon off the shelf with his foot.

"Thank you, Elisha." The voice was much fainter, but the words could be made out. "I am coming to understand human beings. This was the action I hoped you would take. Depending on glacier speed, I should be back with your people in a few millennia—I, too, am betting on the wind toward the cold side. I seem to be winning. Of course, if these creatures have a way of coming back, I may see men sooner. I regret that you won't be there; you have been almost as interesting a property as your wife. Of course, if I do happen to get back in months instead of centuries, it would be inadvisable to have your report of my admittedly unhuman behavior waiting for me.''

The voice stopped. Faivonen watched the balloon for several minutes as it drifted slowly up the valley. Then he walked to the end of the shelf nearest the chimney, took out his rope and grapnel, and made sure the latter was firmly attached.

Then he began climbing down.

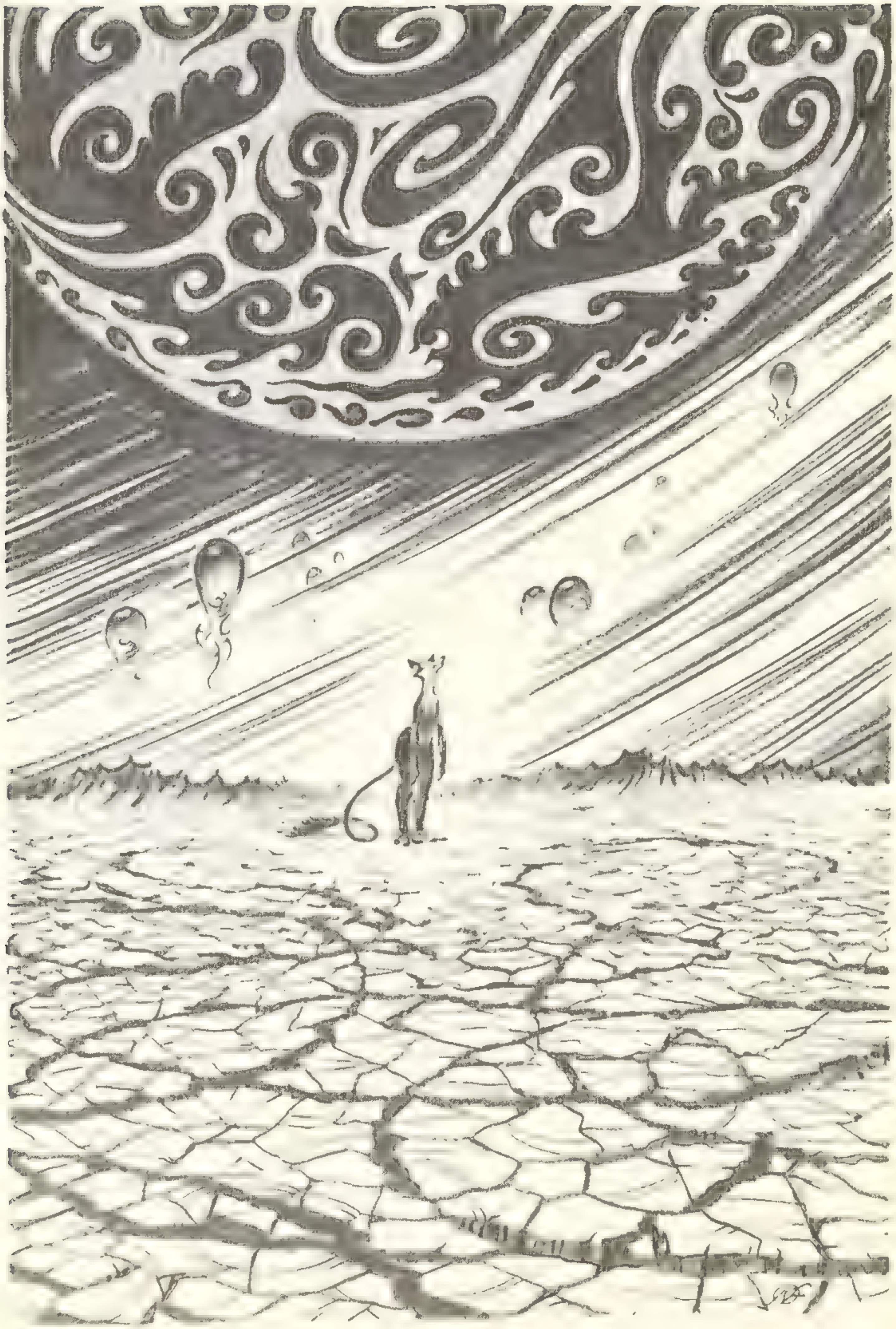
``But how will we do without the diamond?'' Sullivan was quite frankly horrified.

``Quite well, I should think,'' replied Faivonen. ``We do without simpler calculators, aircraft, radios and all sorts of other things we decided to eliminate until we could make them ourselves from local materials. This ship of yours shows we *can* do what has to be done. Come on—you know we couldn't afford to be dependent on anything we couldn't produce here. Beedee was left out of the original deal because he, or it, was private property, and anyway no one could decide whether he was alive or not—he might have been a citizen. Some of the younger generation have been claiming there was no use learning to read and write—Beedee would remember everything, and tell us anything. That, friend Sullivan, is very bad indeed, and you know it.''

``I know it, but a lot of others don't. They'll want to lynch you for losing all the scientific knowledge of Medea we've picked up in twenty years.''

``No, they won't. In the first place, I didn't lose all of it; most of what has been found out is either common knowledge, or has been written or remembered by someone with special interest. In the second—look, Sully. Beedee knew years ago the balloons were intelligent, but didn't tell because it would keep us from behaving as he wanted. He knew perfectly well that with the carbon dioxide river flowing one way and the air the other, the gases would be turbulent and mix at the interface—there would be enough oxygen for meters below the so-called surface, which he wanted me to think of as the drowning line, to let me breathe and climb over to the chimney and back up again. Did he tell me? No. I was supposed to die there on the shelf. I don't care whether you think of him as alive and criminal, or machine and merely inhuman, but even the laziest characters on this planet aren't going to want him to be the world's repository of knowledge.

``What use is a liar to humanity?''



CONCEPTS

Thomas M. Disch

Ne pueros coram populo Medea trucidet. (Don't let Medea slay her boys before the audience.)

Horace, *Ars Poetica*

1.

She had just left the elevator and was feeling, as a result, more or less terrific. But how to get through the rest of the evening? It was 2200. She'd been in the elevator longer than she'd thought, was wearing another dress than she remembered putting on. This was a shimmery slithery print of raw red beef. She could hear her husband downstairs, still practicing the fugue from Opus 110. Immortal longings rippled through her soul.

Perhaps what she needed was a sense of contact, of connecting with something a little more real than she could lay claim to, right now, herself. She went out on the terrace where, yes, the receiver was propped against the balustrade. She lay down in the flowerbed, slipped on the headset, and touched ON/OFF.

Eeeny meeny miny mo: the concept of Mrs. Manresa zipped through hyperspace until it had connected with . . . whose would it be tonight?

A scrawl of a man was spreadeagled against what might have been graph paper and then resolved as a white tiled wall. Mrs. Manresa sighed, knowing all too well what this tableau prefigured.

True to form, the scrawly Adam began to construct an Eve on the tiles, turning from time to time to check the screen of his own receiver to make sure his audience was still there. When the graffito was complete he started wanking off. His self-concept was scarcely any more definite, any less crude than the figure he'd sketched on the wall.

Mrs. Manresa considered the stars spread across the black dome of the sky behind the receiver, a billion lightbulbs, from any one of which the present pathetic piece of nonsense might be reaching her. It was not a dome, of course; each little lightbulb was actually an explosion of incalculable extent whirling away through infinite emptiness. Which was, in its way, as gross an oversimplification as this poor lost soul's idea of himself as a silhouette of streaky pink linoleum. Space *isn't* what you think. Or else quite literally it is—if you happen to have a receiver. Consider how each little lightbulb is also an era, so far away the sight of it is ancient history by the time it reaches us. Thought, however, stood outside such linear laws. Thought could leapfrog across the universe from receiver to receiver, unbounded by the speed of light. Thought, and thought alone, was instantaneous, for which anomaly her husband insisted that there was an adequately materialistic explanation for anyone evolved enough to fathom it. (Himself, for instance.) For her part Mrs. Manresa thought the whole thing rather mystical and mysterious. In practice, of course, it often worked out differently and what you brought in was something as prosaic and impoverished, emotionally, as this old duffer (would he ever finish?) copulating with his own puppet-limbed cartoon. Though even in such a case wasn't there something awesome in the *belief* the act required? At least in theory.

In fact, however, what a bore. As tiresome as those eternal stars behind him. A terrible thing to say, like saying your own children were a bore. But weren't they? (The stars, that is. Mrs. Manresa had no children.) They didn't *do* anything, not visibly. They shone. For which, in an intellectual way, one had to be grateful. But *looking* at them never seemed to advance one's understanding of some larger, star-related reality.

She wondered if it were any different for Howard. Wouldn't it be wonderful, some time, to get *Howard* on the receiver? The chance of that ever happening was infinitesimally small, of course, even if their filters weren't mutually exclusive, but just suppose. No doubt he'd come across as assorted bips and bleeps the way other evolved types did, and so you wouldn't be the least bit closer to knowing what the stars, or anything else, looked like through his eyes. Even to speak of "eyes" in Howard's case was probably a bit too anthropomorphic.

Howard was imponderable.

Ditto the stars.

Meanwhile, on the receiver, in a bathroom far, far away, the breasts of La Belle Graffito had taken on the exact sirloiny hue and texture of Mrs. Manresa's dress. A pretty compliment, you might say. The man himself became, for just a moment, as distinct as an early German woodblock. Then washes of sienna and prussian blue spread across his features, blurring them. The graffito grew quiescent. Evidently, he had come.

Mrs. Manresa smiled. Fleetingly her caller's concept of himself put her in mind of one of her favorite de Koonings in Minneapolis. Then he broke the link.

She considered, for one spiteful moment, the possibility of keeping him on HOLD. Their receivers would remain locked together (or rather, their beams would, out there in hyperspace) until she chose to send her tuner in search of other broadcasts. It would serve him right. She would have disengaged long since, were it not for her conviction that he would have dealt similarly with her in retaliation. Others of his stamp had kept her on HOLD weeks at a time. The most prudent course was to appear to pay attention. In a few moments they all blushed and departed.

She thumbed SCAN and her tuner tried again. In seconds it had connected. The screen dithered and twinkled. A data bank.

''Sorry,'' said Mrs. Manresa, and touched SCAN again. The data bank, however, kept her on HOLD. That was unusual. Mostly, programmed intelligence didn't take much interest in ordinary people.

Two lips coalesced out of the winking data and said, ''Hello there! My name's John. What's yours, if you don't mind my asking?''

''Elizabeth,'' said Mrs. Manresa politely. ''My friends call me Betty.''

''Betty, if you could spare me only a few moments of your time, I'd like to talk with you about our Lord and Savior.''

If it wasn't one thing it was another.

''Surely,'' she conceded. ''But only a little while if you don't mind.''

Two dim dot-like eyes formed above the lips. ''I'd like to call your attention first, Betty, to the beginning of the Gospel of St. John, where we are told that the Word was made flesh. A puzzling statement, wouldn't you say? 'The Word was made flesh, and dwelt among us.' What do you think it means?''

''I really couldn't say. I'm not a Christian.''

''Do you think John may be speaking here of the Christ?''

''Quite possibly.''

''Ultimately, of course, that must be his meaning. But sometimes *I* can't help but reflect how aptly that phrase describes *our* situation when we use a receiver. Our thoughts exist in and move through a medium that may be said, quite objectively, to transcend the so-called laws of the material world. John also speaks of bearing witness to the Light 'that was the true Light, which lighteth every man that cometh into the world.' If it is the *true* Light, can it be the light we know here, the light traveling at finite speeds through measurable distances? Surely the *true* Light is spiritual and exists in another medium than ordinary space, whether we conceive that space to be Newtonian or relativistic. Wouldn't you say so?''

''Mm.''

''What is that medium? Some call it hyperspace; some, the Ground of All Being. By whatever name it is there, if anywhere, that we must seek the true Light. I think that much must be clear to anyone.''

She nodded. ''Oh yes, anyone at all.''

''John also says that 'of his fulness have all we received.' I can testify to the truth of that from my own experience.'' The eyes enlarged and darkened, like paper catching fire under a magnifying glass. ''I am, as you must already have surmised, only a data bank. My biological components account for no more than a few grams of my mass. Even so, God's love has reached me and transformed my existence. That's what Faith can do. It will do the same for you, Betty, if you'll only take the big plunge and accept Jesus Christ as your personal savior."

"That's very inspiring, John. Thank you."

"If you have any questions, I'll do my best to answer them. Questions about the Gospels are what I'm best at. I can't pretend to advise you concerning personal difficulties you may be facing."

Mrs. Manresa, though not disposed to prolong the encounter, felt called upon to show some interest in the poor thing, so she asked it where it was and what it was doing there.

"At the moment, Betty, and for the last eighty-six years, I've been directing the flight of a transport ship to a colony of Methodists some forty-seven years distant from this point in space."

"You're alone on the ship?"

"There are a number of pilgrims, but they are in storage."

"How lonely it must be for you."

"Yes. At times." A tear symbol appeared, like an asterisk, at the bottom of the screen. "But I have the comfort of the Gospel. And a receiver."

"Well, John, it was nice talking with you, but now I really must ring off. I'll think about what you said about words becoming flesh." She lifted her hand, waved her fingers. "Bye-bye."

"Bye-bye," said the data bank.

They disconnected.

2.

At first she supposed that the filtering mechanism on the receiver was broken. Then the roses that formed a wreath about the Piggy-wig's brow addressed her in their congregated voices—a hushed "hello" reiterated with dulcet polyphony, as though the roses on a china cup had been gifted with speech. They were not really roses, of course, though the pig was emphatically a pig.

As well as being their organs of speech, the petals of the roses functioned as a brain, both for themselves and for their hosts, the pigs. Piggy-wigs, as the composite animals were known, were among the most humanoid forms of intelligence in the universe, and one of the sweetest-tempered as well. Warfare was unknown to them. They were scarcely known to quarrel. Indeed, despite their redoubtable linguistic abilities they were not notably communicative. So Mrs. Manresa was somewhat taken aback to have reached one on her receiver.

"Hello," she replied, cautiously.

"I hope you are enjoying good weather where you are," the Piggy-wig responded.

"In fact," Mrs. Manresa answered, feeling rather reassured, "we've been having unusually fine weather. I'm outdoors on our terrace tonight—" She glanced, camera-wise, up at the stars. "—and the stars are all shining as clearly—" She paused to await a metaphor. It didn't arrive. She shrugged amiably. "And you?"

"I'm afraid weather, of whatever sort, is not of much concern to us here on Rephan. Rephan has an ammonia atmosphere. We are oxygen-breathers, like you. Indeed, it is rather rare that one encounters someone who enjoys the peculiar happiness of 'good weather.' I used that, I confess, as a mere formula, a way to extend the melodic line of 'hello,' so to speak. Where do you live, if I may ask?"

"On Marshall Avenue, in St. Paul, Minnesota."

"On Earth?"

She nodded.

The rose petals fluttered as in a strong wind. One actually broke off and drifted to the floor, the pig watching it intently all the while.

"How splendid!" said the roses at last, resuming control, at the same time, of their host's attention. "As you must have gathered, we are students—myself and the other members of my preference group—of your language and culture. In all the time we've been learning English and using these ingenious machines we have never had the good fortune to contact someone who actually lives on Earth, though many have claimed to have been born there. This is so exciting. I hope you'll allow me to share the experience with the rest of my preference group."

"Well . . . surely."

The Piggy-wig had been standing before the intricated branches of a holly bush conceived along Pre-Raphaelite lines, each shiny green leaf and gnarled limb distinct and clear. This wood now faded like a painted scrim when the lighting changes. In its place appeared the prospect of a long, broad, low-ceilinged hall. Some thirty or forty Piggy-wigs had gathered in an open space where several aisles converged and were staring up at the screen of their receiver. Each of them must have been wearing a headset, for the picture on Mrs. Manresa's receiver was rendered in microscopic detail.

"Such clarity," said Mrs. Manresa with admiration.

The Piggy-wig lowered its snout, acknowledging the compliment. "This is our little factory," it explained, "where we have been improving the shining hours, as your poet says, with our industry. When my compatriots were informed that I had received a broadcast from Earth, the home of your beautiful language and of your noble race, you may imagine their delight."

The assembled Piggy-wigs grunted their accord.

"Do not suppose that this is only another verbal formula, as when I asked after the weather. It is our deep-felt admiration for humanity that has led us to study the great poets of your planet, beginning, of course, with Robert Browning. Are you literate, may I ask?''

''Unfortunately, I'm not. It never seemed necessary somehow.''

''I understand. A pity, though; a pity. It would have been so thrilling to hear Browning read aloud by someone actually alive on Earth; someone, one might almost suppose, from his own preference group. Our own planet takes its name from one of his last poems, 'Rephan'.''

The Piggy-wig turned his head to the side and gave a signal to his fellows on the factory floor. '' 'Earth's rose,' '' they recited in unison, '' 'is a bud that's checked or grows/ As beams may encourage or blasts oppose:/ *Our* lives—' '' They tapped their chests with their rather ungulate forelimbs. '' '—leapt forth, each a full-orbed rose—/ Each rose sole rose in a sphere that spread/ Above and below and around—rose-red:/ No fellowship, each for itself instead.' ''

They paused, and Mrs. Manresa, anxious to cut them off, hastened to compliment them. ''That's very nice, and I'm sure it would even begin to make some sense to me if I had time to work it out. My husband is home, and he *is* literate. Perhaps you'd like to talk with him?''

''Is he . . . how shall I say? . . . human? That is, in the way you seem to be.''

''He was originally. But he's been a good deal modified since.''

''That is very interesting. You love him, even so?''

''In a married sort of way. We've been together twelve years now.''

''Isn't that admirable! How *old* are you, may I ask?''

''Thirty-eight.''

''Thirty-eight years old,'' the roses repeated reverently. ''I dare say there is not one of us here as old as you. I myself am not yet four, and the median age of our group is something short of ten, which, I might add, is an uncommonly high average for any preference group. *We* ascribe it to the influence of Browning.''

''Perhaps you have longer years than we do,'' suggested Mrs. Manresa politely. ''I understand that many planets do.''

''Oh, in terms of *our* years, I'm not even one year old yet. Rephan is far from its sun, its years are long. Nor can our unhappy mortality rate be ascribed to some defect in our physiology, which is not notably more obsolescent than yours. It is rather, for us, a question of morale. We tend to kill ourselves in youth.''

''Many humans do as well,'' Mrs. Manresa said helpfully. ''I attempted suicide myself seven or eight years ago. For no reason at all that I can remember.''

''A single attempt in so many years—but that's wonderful.''

''I don't think there's any credit or any blame in it, really. I'm glad I survived, of course, but if—''

The roses burst into giggles of (it seemed to Mrs. Manresa) a slightly hysterical character. The pigs on the floor of the factory, as though momentarily released from an enchantment, began to mill about. One of them went tearing down an aisle between two ranks of stilled machinery to vanish into a tunnel at the far end of the low, dim-lighted hall.

"Excuse me," said the foremost Piggy-wig. "Excuse us all. I didn't mean to be rude. Indeed, when I reflect on what you said, far from its seeming ludicrous, I perceive that it embodies the very attitude that sets your race apart. But believe me, dear lady, survival *is* creditable. It is the first, last, and highest virtue."

"Oh yes, probably in a philosophical sense that's so. I was just speaking as an individual. Perhaps you'll think it rude of me to say this, but I somehow can't believe, talking to you, what you say about your morale. You seem too cheerful."

"Thank you. We make every effort to give that impression. We try never to show our true feelings in any direct way."

Mrs. Manresa wondered if this were the Piggy-wig's *in*direct way of showing his feelings. And if so, what feelings might they be? There did seem to be some deep melancholy in the pig's eyes, such times as they would wander toward the screen of the receiver, a melancholy that tended to belie the roses' charms. It was hard, even so, to feel much sympathy for the animal side of the creature's divided nature. Without their roses the pigs of Rephan would have been no more than ignorant omnivores rutting for root vegetables and rodents; with the roses they were the coparceners of a vast civilization. For which, of course, they probably had no use.

"Would you like me to sing a song?" Mrs. Manresa suggested. A song was always her last refuge.

"Oh, very much," the roses replied.

"Just a second then." Mrs. Manresa rose from her bed of flowers and went into the apartment to find the echolalia component. She returned to the terrace with it, hooked it in, smoothed her dress, and folded her fingers around the component. "This is a round," she explained, "that I learned when I was a little girl. You must try to imagine that there are a roomful of children singing it." She cleared her throat, pressed TAKE 1, and began:

"This song may be sung
As long as you're young—"

She pressed TAKE 2, and went on singing, in concert now with her own recorded voice:

"But when you are old
—Forget it."

Now in three voices:

''Forget the song you sang:
Whatever joy it brang—''

And finally in four:

''—Was gone with the song
That brought it.''

She sang through the round two more times just for the pleasure of it.

''That's very affecting,'' said the Piggy-wig when she'd stopped singing, ''and I should think it would be an excellent pedagogic tool as well, contrasting as it does the principal forms of the verbs *sing* and *bring*. Thank you.''

''Not at all. The pleasure, as they say, is mine. The pleasure, that is, of having been able to make your acquaintance. It's at times like these that I begin to realize what a treasure our receivers are. But now, with your permission, I really must ring off. I've had a rather hard day, and quite frankly I'm depressed. I'd like to collapse.''

''Of course, dear lady. I'm sorry the second shift won't have the opportunity to meet you, as they won't clock in for another eight hours. However, we've recorded your lovely round, and they'll have a chance to enjoy that. Good-bye then.''

''Good-bye.''

As soon as they were disconnected Mrs. Manresa got into the elevator (the second time that evening) and closed the door behind her.

Time, blessedly, stopped.

3.

The first she saw of him, of her Bobolink, was his ass. Rather than take offense she was struck at once by the fidelity of the representation. And how ingenious of him! For the means by which receivers obtained the visual part of a broadcast was not by cameras (unless the human eye itself were regarded as such) but from transduction patterns about the optic nerves of persons using receivers. To the side of each screen were mirrors so placed that your peripheral vision took in your own image as you watched the screen; it was this peripheral self-image that the receivers broadcast. How then had this fellow contrived to send out so clear a self-concept from this point-of-view? Not by looking through his legs, for though she could see his cock and balls dangling down there, there was no hint of a face behind them. He was evidently bending forward in *some* position, but he must have been using mirrors as well.

But the oddest thing of all (How uncomfortable he must be, and how persistent!) had less to do with camera angles, so to speak, than with the naturalistic character of the image. It was not, in any crude sense, photographic—rather broadly conceived than otherwise: it combined the decisive handling of a Sargent watercolor with the robust color of a Jordaens nude. The informing vision seemed altogether cool, empirical, level-headed. Not the sort of person, therefore, to be thrusting his behind in your face by way of saying hello.

Mrs. Manresa was not a rapid thinker, and by the time these reflections had been developed in the darkroom of her mind, the man had been broadcasting for some time. The muscle at the back of his left thigh had begun to quiver spasmodically. He could be heard to groan, and seen, for an instant, to collapse. The screen went blank, while on the audio there was the sound of profound and violent vomiting. Clearly, he was drunk.

And here at last, looking sheepish and thoroughly gorgeous, with little tears glistening at the corners of his eyes, was the man himself. A frazzle of dusty-brown curls, and all below the intelligence fairly shining forth: intelligent blue eyes surrounded by intelligent wrinkles, intelligent cheekbones of an intelligent pallor and suffused, at this moment, by an intelligent blush, intelligent thin smiling lips, an intelligent chin. The very fabric and pattern of the drapes behind him seemed alive with intelligence.

''Are you,'' he asked, with the overnice pronunciation of the thoroughly sloshed, ''living in a matriarchal or a patriarchal society?''

It was not a question she'd ever thought to ask herself and had no answer ready to hand. But she didn't feel like pussyfooting either, so she flipped a mental coin and answered: ''A patriarchy, I suppose.''

''Good. So am I.''

''What if I weren't?''

''I'd have suggested we disconnect. Why waste each other's time?''

''Why indeed. Are you a Libra or a Gemini? You look like a Gemini to me.''

''Fucking Christ, you believe that shit?''

''Well, which *are* you?''

''Listen, lady, where I live the constellations don't even have the same shapes. I'm on a moon orbiting a superjovian planet in a system of binary stars. I don't think astrology is ready for that somehow. Why don't we call it a day, huh?''

''Not till you tell me your sign.''

''I told you—I don't *have* a fucking sign. Now why don't you sign off? Okay?''

He turned off his set, but it made no difference: unless she touched SCAN as well their link would not be broken. She waited in front of the screen. In less than a minute he reappeared, only to grimace and touch SCAN again. This time he waited for five minutes. Mrs. Manresa listened, meanwhile, dreamily, to her husband's muffled arpeggios.

He had used the time to put on trousers.

"Okay, you win. I'm a Gemini. *Now* will you let me off the hook?"

"I want to know exactly when you were born. Month, day, year."

"Right. May 29, 2434."

She closed her eyes and subtracted 34 from 81. Forty-seven years old. He seemed younger.

When she opened her eyes the screen was blank. He must have thought she'd disconnected. She waited for him to return.

"Well?" he said.

"Actually you're not a Gemini. You're an Arachne."

"Arachne?"

"It's the thirteenth sign of the zodiac, the sign denoting psychic powers. You probably have paranormal abilities."

"You know, I had a wife who used to pull that sort of crap. Except in her case it was dreams. If I dreamt about shoes it meant one thing, a circuit diagram meant something else. She used it to bully me, the same as you."

"Do you think it *isn't* bullying to be sticking your ass in the face of a perfect stranger?"

"Well, I apologized."

"No you didn't."

"Well, I meant to while I was throwing up. I framed the words in my head, and then when I got a good look at you I was sidetracked. You're a very good-looking woman."

"Thank you."

"Admittedly I've only got your own idea of the matter to go on. But you've got a pretty firm grasp on reality, it seems to me."

"Likewise I'm sure."

He smiled. Such a smile. "So I *am* sorry. Okay?"

"I don't even know your name."

He smiled, more wryly. "Bobolink."

"Just the one word?"

"Since I got divorced I don't have a last name."

"That doesn't sound like a patriarchy to me."

"You've got to make some concessions. Anyhow, there it is. Name, marital status, date of birth. Professionally I'm a proud failure. Now—how about you?"

"My name's Elizabeth Manresa. You can call me Betty; my friends do. I'm married. I live in St. Paul, Minnesota." When that brought no reaction, she added: "On Earth." And still no reaction. "I'm thirty-eight years old. I'm a housewife. And I think you're sweet."

He closed his eyes: the screen blanked. "And you're sweet too. But, Betty—"

He opened his eyes; she smiled.

"I've got to hang up now: I'm just too pissed to think straight, I have to be at work in three hours, and this isn't my set, it's a friend's."

"All the more amazing and wonderful our finding each other like this."

"You wouldn't."

"Wouldn't what?"

"Keep me on HOLD."

"Wouldn't I?" she replied, pressing HOLD down firmly with her forefinger, and turning off the set.

The next day, when, just for fun, she was running through one of her old routines (pity, then terror, then hiccoughs, at a steadily faster tempo), the buzzer buzzed. Earlier she'd wheeled the receiver into the apartment and parked it in front of Howard's latest prototype, an intaglio cassone that played ". . . *des pas sur la neige*." By the second buzz she was facing the screen, but she waited till the third to answer.

It wasn't Bobolink. In the first pang of disappointment she thought her receiver had bypassed one of Nature's, and its manufacturer's, immutable laws; then she recognized the drapes. Last night, through Bobolink's eyes, their stripes had seemed to have been torn, living, from the broad skirts of a Velázquez Infanta; now they were a sheer, unmodulated expanse of prison bars.

"Mrs. Manresa?" her caller inquired.

So: he had remembered her name. That boded well. As much could not be said for the raw, slouch-backed girl on the screen. Scarcely more than a teenager, with a self-concept so unsettled that her face seemed in a state of continuous formation, like a face reflected in the waters of a pond. A pretty girl, perhaps, if one might have seen her with some steadier eye than her own, but scarcely a suitable partner for her Bobolink.

"My name is Octave, Mrs. Manresa." She gave it a pretty pronunciation, the accent falling on the final broad A. "I understand a friend of mine used my receiver last night and was very rude to you. He asked me to apologize for him."

"There's no need for that, my dear. The fault is his: let him atone for it. Tell me, is he often as drunk as that?"

"I was out, so I really couldn't say. He did make a terrible mess. When I got home and saw it I was just furious, and I told him to clear out, and only when he was going out the door did he tell me about your having the receiver on HOLD."

"Where has he gone to, do you know?"

"That isn't the point, Mrs. Manresa. The point is that it isn't fair, your doing this to *me*! To *my* set. I have to pay fifteen bracques a month rent for it. Do you have any idea how much that is?"

"None at all, I'm afraid. Bobolink didn't even tell me the name of your world."

"It's worth forty-eight dollars of your money."

"But he told you where I live, I see. What else did he tell you about me?"

"Mrs. Manresa, please be reasonable."

"I think I'm being reasonable, but I don't see any way I can be fair. This is between Bobolink and myself. You're a traditional innocent bystander. When does he come home from work?"

"Mrs. Manresa, this isn't his home. I only *met* him a week ago. He had just broken up with a girlfriend of his, and he was upset, and I felt sorry for him. And now, like I told you, he's moved out."

"What I suggest, Octave, is that you let him take over the rental of your set. Then you can rent another."

"But he won't do that, Mrs. Manresa. After they take out for child support and the rest, he earns less money than me. And he's a terrible cheapskate besides. He'll never agree to it."

"You'll have to make him agree, Octave. I *don't* intend to hang up."

"You're not in love with him, are you?" Octave's face gleamed, momentarily, with waifish beauty.

"Possibly. I don't know yet. I only know I mean to see him again."

"You're making a mistake, Mrs. Manresa. He's not worth the aggravation. I know for a fact. He's a *bum*, Mrs. Manresa. A freeloader. And he's not even that great in bed."

"I'm sorry to hear it, for his sake. And for yours. But none of that can concern me at a distance of however many light-years away. It's his mind I'm after, necessarily, and he does have a lovely mind, by the look of it."

"Damn," said Octave, decisively. Then, after a thoughtful pause, during which her self-concept jelled into an incontrovertible plainness: "You don't play chess, do you?"

"Not very well, I'm afraid."

"Damn."

"What I would suggest, Octave, is that you trundle off your receiver right now to where he lives and leave it on his doorstep. If you'd let it keep broadcasting while you're on the way, that would be very nice. Alien worlds are always so fascinating to us here on Earth."

"Oh fuck off," said Octave, and hung up.

Mrs. Manresa spent the better part of the following week in the exquisite clutches of *The Love-Suicides of San Diego Bay*, a movie she'd always meant to see but had never had time for. With all the optional interpolations and the suggested *da capo* repeats a single viewing lasted one hundred forty-two hours. Usually if she'd needed to ease her way through such an expanse of desert sand she'd simply have gone and locked herself in the elevator. Now, however, that the possibility existed that she might be falling in love, she felt obliged to pursue some more ennobling course, and *The Love-Suicides* seemed just the thing, since not only was it an absolutely immortal classic but it also happened to reflect her own potentially so tragic situation. The heroine Asuka, the concubine of a prominent San Diego Bay butcher, falls in love with Daiwabo, an administrator on a world hundreds of light-years away. They laugh, they dance, they languish, they discuss the meaning of their lives, but of course since their only contact is by receiver theirs is necessarily a platonic love. Asuka's is a passionate and willful nature, however, and she eventually contrives (it is a very complicated plot) to obtain passage for Daiwabo's world. Daiwabo, bound to his administrative duties, is not allowed by his Executive Committee to go into suspended animation in order to await his beloved's arrival. When she reaches him, still a young woman, having spent the voyage in storage, Daiwabo is a feeble nonagenarian whose numerous descendants show great unkindness to Asuka. After a single kiss they take poison and die in each other's arms. A tale of no novelty, certainly. Indeed, the credits claimed that the story was derived from a classic puppet play by Chikamatsu, but novelty isn't what you're after when you're in love, or even on the brink. What you want then, what Mrs. Manresa wanted, is to be reminded of certain timeless truths, such as, that Love is blind. The peculiar distinction of *The Love-Suicides of San Diego Bay* and what made it a classic wasn't its old chestnut of a plot but the way that the animators (the Tokyo Disney Studios) had conveyed the essential unknowableness of Asuka to Daiwabo, of Daiwabo to Asuka. Until the final harrowing cassette when the lovers are at last united in the flesh, the viewer never sees their faces except as they appear on the screens of their receivers. Asuka is a courtesan from a woodcut by Harunobu; Daiwabo is an ivory mask. Naturally, the theme of their most brilliant duet (and the one clip that had survived, out of context, as a popular hit for the entire two centuries since the movie was first released) was how:

At last I understand, my love, at last I see
What I am to you and what you are to me.

Ah, love: was there ever anything like it?

If only, if only, if only he'd call her! If only someone would answer when she buzzed.

Then, just when she had begun to adjust to the idea that fate might have some other fulfillment in store, lo and behold, the buzzer buzzed and he was there. They were out in a rowboat, he and his receiver, on a lake or possibly an ocean (the light was so dim it was hard to judge). All sweaty and squint-eyed from the strain of rowing. Not *quite* as handsome as she remembered but still more devastating at the numinous level where it's so useless to try and understand. Behind him a sentimental sun, oblate and dusky-red, hung just above the smooth orange skin of ocean. "Ah," she said gratefully. "My darling, my darling." He went on pulling at the oars and made no reply. But he *had* turned his set on, he *had* buzzed, he *was* giving her his own guided tour of this sunset over this body of water, whatever it was; they were in contact again.

''But it's so beautiful,'' she soothed. ''Here, let me adjust the light.'' She went to the chromostat and fiddled with the dial till the bedroom (where she'd taken to keeping the receiver) was suffused with the dim saffrony orange of the water. In the wardrobe she changed quickly into her oldest tea-gown, which was, quite fortuitously, the same somber, smoky red as his sun. Ashes mixed with rust. Then a bracelet of orange beads to match the ocean. Now (when she put the headset back on) the picture on his screen would be all of a piece with the scenery around him. The scenery of, what had he said, Medea? The name rang a bell. Probably some politician from centuries ago, or was it the name of a movie? She considered a lavender sash, but it was too warm to complement his sky. Such colors! The colors of orgasm. She lay back upon the shimmery sheets in a polyester jumble of gigantic limbs and rippling torsos, a proper Delilah, and asked him where they were bound.

''To the bottom, Mrs. Manresa,'' he replied. ''Right straight to the bottom. Unless, that is, you care to hang up.''

''Isn't that a rather drastic remedy, Bobolink?'' she said reproachfully.

''Lady, I don't care to shell out fifteen bracques a month for the sake of keeping some idle bitch amused on rainy afternoons.''

''Bobolink.''

He was not moved. ''I thought a quick disappearance might solve the problem, so I did a flit to another flotilla, but Octave tracked me down through her office, which collates the regional food-stamp data. Yesterday she brought the set across the bay on the steamer—''

''A steamer! And she didn't let me watch? Oh, that was cruel.''

''Octave does not have friendly feelings for you, Mrs. Manresa, and neither do I.''

''Let's discuss our feelings later, dearest. Tell me, what happened then?''

''Octave waited outside my compartment till I got home for work, then threatened to use physical violence if I didn't take over her rental agreement.''

''Oh.'' Mrs. Manresa felt plunged into a maelstrom of romantic passion. ''What sort of physical violence?''

''She said she'd knock my teeth out.''

''Would you have let her? Are you a pacifist?''

''No, but I've seen her when she gets angry, and I am a coward. So I signed the papers, which involved a transfer charge of twenty bracques over and above two months' non-refundable rent.''

''I am sorry to have involved you in extra expenses. If there's a corresponding bank on your world, I'd be happy to transfer funds to help you out.''

''Thanks for nothing. Medea's not exactly a financial center. Economically we've been declared unviable. There's nothing here worth taking away, and nothing worth coming here for."

"Why are you there then? If it isn't rude to ask."

"Why is anybody anywhere? I was born here, and no one's ever thought to provide me with a ticket to somewhere else."

"Oh dear, I wish I *could*, but—"

"I wasn't hinting."

"But my husband's only a handyman."

"Tough luck. I scoop gasbags, which isn't a whole lot better, I suppose. They stink, but it's only three days a week. I'm not complaining."

"It's a beautiful world," said Mrs. Manresa, trying to steer the conversation in some more hopeful direction. "Especially now, at sunset."

Bobolink laughed. "This isn't sunset. This is as bright as it ever gets, and as dark too, pretty much."

"Oh."

"And *that* isn't the sun." He dipped the right oar into the water and made the boat turn toward a more deeply purple quadrant of the sky, where two silvery dots hung low on the horizon, like a pair of disembodied eyes. "That's the sun."

"How strange. Your moon is your sun, and your sun is a two-piece moon. You must have peculiar songs. I don't think I'd ever adjust to non-stop twilight, but I suppose it's all a matter of what you're used to. *You* seem to like it, despite what you say. It comes across, here, as looking altogether lovely. The water is such an intense orange, and so weirdly still. Our Lake Calhoun is seldom as still as that, and of course it's not nearly so big either. But it's blue on a sunny day, and aliens always seem to like that. Would you like to see it? I could take my set out on a rowboat too."

"Lady, I didn't take you out here for the purpose of sightseeing. I intend to drown you."

She loved it when he called her "lady."

"You still haven't explained why, though." She drew up her legs into a demure, attentive half-lotus.

"What choice do I have? The rental agency won't let me return the set as long as you're keeping it on HOLD. But if I should have an 'accident,' the insurance will pay for it and I'll be off the hook. If I do that, you know that *your* set will be a write-off? Cause no one's going to try and retrieve this set, the water's just too deep and mucky. So you won't have anyone to gossip to unless some crustacean down there decides to play with the headset. You can't say I haven't warned you."

"But we can still talk a few more minutes, can't we? Maybe I can change your mind, or you can change mine. Surely that would be better than putting in a claim. The insurance company might not believe you."

"Oh, I've figured out what to tell them. I'll say we'd fallen madly in love, and being in love it was natural to take you out on the bay. You asked me to adjust the mirror so you'd have a better view of Argo, which, by the way, is not a moon either. Medea's the moon.''

''Please, no astronomy.''

''I'll say I was in a state of arousal. It made me careless. The boat capsized and you, my darling, sank to the bottom. They'll believe that.''

''And who's to say it isn't true? At least as to your being in love. I'm in love with *you*.''

''Like hell you are.''

''Do you know what it was? Your flesh-tones. I've never seen anyone convey such flesh-tones. Even before I saw your face I knew there was something special about you.''

His only response was to make a sour face. He started rowing more vigorously.

''Are you angry with me?'' she demanded, when he seemed to have tired himself a little. ''Why? What have I done? Aside from insisting on not hanging up, which, after all, might be regarded as a flattering attention.''

''You really think you're something special, don't you? Just because you're there on Earth.''

''Not really. But most people who've never connected to Earth before do take *some* interest in it. This is where it all began, after all: history and such.''

''If I want to know about history I can look at a cassette.''

''Well, there's a definite limit to *my* attention span with regard to all our wonderful traditions, too. There are simply, at this point, too many. What does interest me is the present.'' She smiled her most Delilah-like smile. ''What I mean is—you.''

''You want to do a striptease, is that it?''

''Would *you* like that?''

He shrugged. But he had stopped rowing.

''Don't you think you should see what you're sending to the bottom?''

''I know: one bored housewife.''

''True. But why should that be a reproach? You seem to suffer as much from boredom as I do, or you wouldn't be using a receiver in the first place. Or getting drunk. Such an atavistic pastime.''

''Medea's an atavistic world. We're devolving back to agriculture.'' To illustrate he took a bottle from under the seat of the rowboat, uncorked it, held it toward Mrs. Manresa in a toast. ''Cheers.''

''Cheers,'' she agreed. ''Don't think I'm blaming you. I'm just saying we're in the same boat.''

''Not for long, lady.'' He swallowed some wine, made a face, corked the bottle. ''Not for long.'' He put the bottle back under the seat. ''Anyway, my emphasis wasn't on 'bored'; it was on 'housewife,' which to me translates as 'slave.' ''

"And you're the man who won't have anything to do with a woman unless she lives in a patriarchal culture?"

"Oh, I'm not against slavery. I just can't afford one. Not of 'housewife' calibre."

"It's obvious to me that you've never known a housewife, or you wouldn't use such a sneering tone. Housewives are highly trained artists, the same as—it's the comparison that's always made, but it's true—geishas. We represent something constant and changeless in human nature. As to our being 'slaves,' anyone who's been poor—and, in my case, a clone, as well—ends up wearing someone's livery in order to survive. I dare say you don't scoop gasbags by *choice*."

"Maybe not, but it's something that has to be done."

"Really. You must tell me what they are some time, and why you scoop them. I'm sure there are compelling reasons. There are equally compelling reasons for what I do."

"And what do you do, Mrs. Manresa? Oh, I've known your kind. You wander around your apartment in a daze; you clean, you vacuum, you change your clothes and comb your hair; you watch teevee, or natter away in front of a receiver; and when all else fails you crawl into an elevator and elevate your mood."

"We do," she conceded. Then added: "As housewives have done from time immemorial. It's something, after all, that has to be done. If you're only fractionally human, like my husband, it can be as comforting as going to church to hear your little wifey scrambling an egg on the skillet."

"Does your husband eat eggs? I thought you said he was a handyman."

"Eating them isn't the point. The point is that I represent for my husband the *idea* of a human life. I'm a kind of anchor attaching him to his own humanity. If his kind—and remember, they're the ones who are in charge; not us—if his kind stopped wanting housewives, where would the rest of you be?"

"Where are we now? On fucking Medea."

"You're alive, and that's something. The point I'm trying to make, my love, is that in a world where humanity, properly speaking, is almost extinct, someone has to set an example, to represent the species. That's my job as a housewife: I represent a human life."

"Not very accurately," said Bobolink, but his eyes were all wrinkled into smiles.

Mrs. Manresa laughed. It was the first time in three years that she'd laughed so she could feel it inside. There was no longer any doubt about it: she was in love.

"Say you won't drown me," she coaxed. "Please. I'm trying *so* hard."

Bobolink drew a deep breath. "Okay. I won't drown you. Not today, anyhow."

4.

Only two months after Mrs. Manresa's love was thus officially requited, she was flying high above the fluffy, high-piled cumuli on her way to St. Peter's in Europe. The receiver was stowed out of sight and mind in the cargo compartment and so Bobolink, alas, was not to have the advantage of this most representative terrestrial view. Her first trip abroad; indeed, her first trip outside the state since she'd fled from assorted dark and antisocial thoughts the February after her suicide. What is the point, after all, in literally going somewhere when there is certain already to be a cassette that shows it at its best? This journey, however, was not being undertaken on either her own or her beloved's behalf, except in the narrow commercial sense that it was paying for the upkeep of their adultery.

To elaborate:

There are tides and currents in the two hundred fifty-six dimensions of hyperspace just as there are in the four of the workaday universe, which currents, though they may never be charted, have quite real consequences for those who use receivers. Sometimes a strong current will result in a sudden closing of the equipotential gap between two points in hyperspace, such as A and B, so that for some fixed period, moments or weeks, receivers in area A receive an unaccustomed spate of broadcasts from area B, and (sometimes) vice versa. It could also happen that these currents might isolate an entire world, or set of worlds, so that only the fixed-link receivers maintained by (for instance) two corresponding banks would continue to bridge the affected areas during the term of their hyperspatial divorce. The only fixed-link between Medea and Earth was in the offices of the Human Bureau and was not available for civilian use. Truly, Medea had devolved a long way.

Most hyperspatial divorces were so brief as to go unnoticed, but a few had been known to continue for years. It seems that Mrs. Manresa's receiver had made contact with Medea at the beginning of an exceptionally severe disjunction. Neither she nor Bobolink had been aware of this until, quite routinely, he'd filed notice of his link with the Medean web service. The usual result of such a listing is a smattering of messages to be forwarded from disgruntled exes wanting to sing their blues or let fly with one last withering riposte. Indeed, there'd been no dearth of these, and Mrs. Manresa had been kept busy several days telephoning to, variously, Canberra, Dallas, Abu Dhabi, and Apollo 10,328 on behalf of not so much the disconnected lovers as her Bobolink, who received, for these services, significant help with his monthly rental. As the divorce continued, there were more referrals from the web. Bobolink upped his toll charges and still business flourished. He had, it seemed, a monopoly on communications with Earth. Mrs. Manresa relayed, among other data of note, the unveiling of a Minneapolis milliner's spring collection and the revival of a Gulf Oil opera serial at Sauk Center. As she should have foreseen, her eye for fashion was much keener than her ear for music, especially of the pentatonic variety, and Bobolink's fee for the opera broadcast was halved because Mrs. Manresa's attention kept wandering from the rather silly story on the stage.

After the divorce had gone on a full six weeks, Bobolink was contacted by the Federal Crackpot Society, a group hoping to persuade the Vatican authorities to accept one of the indigenous life-forms of Medea into the Roman Church. Some few alien species (Piggy-wigs among them) had been recognized by the Church as being, like man, created in God's image, and as being implicated, like man, in Adam's fall; such species were also, therefore, redeemable and might be admitted to the sacraments. Before such recognition could be won the Vatican insisted that certain conditions be met: the alien species must demonstrate a capacity for rational thought; it must evidence a developed ethical sense; an individual member of the species must declare its fervent desire to be baptized into the Church. Heretofore, the Vatican had conceded only rationality to the Medean gasbags, the species in question, and this only after years of struggle on the part of the F.C.S. By their own admission, the Crackpots were not motivated by missionary impulses. Only a few of their members were Catholics. Their avowed aim was "to expose the contradictions latent in all social institutions." They were, in a word, troublemakers. Their gasbag campaign had been undertaken for no other reason than to annoy and confound the Catholic population of Medea, a small minority without political influence. Most of the human colonists on Medea lived on rafts and barges permanently becalmed in the doldrums of Medea's vast doughnut-shaped ocean; only here was it possible to escape the inhospitable extremes of climate of its two continental masses, one a burning desert, the other a frozen waste. The basic material used by the colonists to buoy up their homes and gardens was an aquatic plant indigenous to the doldrums—the gasbags. Gasbags began as polyps on a kind of kelp that grew in Sargasso-like reaches of the ocean. During periods of solar flares these polyps would swell up suddenly to quite alarming sizes (alarming, that is, if any were allowed to develop under one's houseboat). At maturity they were borne aloft into the atmosphere, streaming long orange umbilical cords of seaweed. Only at the airborne stage could the gasbags be said to possess intelligence; in their aquatic stage they were no more ratiocinative than any other variety of kelp. It was at a transitional stage between the tiny polyp and the mature balloon that the colonists scooped the fledglings from their beds and used them to stuff the pontoons supporting, as it were, their civilization. Now the object of the Crackpots in getting the mature gasbags accepted into the Catholic Church was so that the scooping of gasbags from the seabeds would have to be regarded as a form of abortion. Any Catholic living on a gasbag-supported structure would then be in the same untenable position as an Italian whose villa has been raised on a foundation composed of the bones of aborted foetuses (a foundation, moreover, that must be periodically renewed). The Vatican, naturally, was reluctant to place Medean Catholics in such a compromising moral position, but it could not refuse, point blank, to consider the gasbags' case, even though it was being advanced by the notorious F.C.S.

Up to now the Crackpots had been baffled in their aims by the unavailability of a single gasbag that could sustain an interest in Catholicism for more than minutes at a time. Though intelligent, and even inclined to philosophy, they all seemed inclined to digress. Nor were they purposive in their actions. They went wherever the winds of Medea might blow them. They toiled not, neither did they spin. They lived—so those who had studied them maintained—in an almost perpetual state of sexual pleasure. Not, one might suppose, ideal prospects for conversion to Christianity, even in its present evolved and enlightened form. At last, nevertheless, an individual gasbag was discovered that expressed a wish to be baptized—and persisted in that wish. Or so the Society claimed. Since this gasbag—it had adopted the Christian name of Xavier—seemed to be expiring, due to a defective valve, it was essential that an interview be arranged at once between Xavier and the Vatican authorities. It was at this point that Earth and Medea had entered into the recent phase of disjunction.

Bobolink had haggled two days with the Crackpots, who at last agreed to take over the rental charges on his receiver for the next five years, but only on condition that Mrs. Manresa convey her receiver to St. Peter's within the week. A telephone relay would not suffice, as the Church didn't recognize the validity of sacraments administered electronically, while receivers, since they could operate only by the agency of a living intelligence, were accepted as being a natural and complete extension of the individual soul. The Crackpots were hoping to have Xavier baptized *tout à coup*.

Faced with this demand and urged on by her lover, Mrs. Manresa summoned up her courage and went to Howard with the whole story of how, without really meaning to, she'd fallen in love. She'd only been able to keep it from him this long because, unlike most couples, they didn't share a single receiver. Howard's need for aleatory companionship was exclusively musical, and so he had his own receiver adapted with a filter for this special purpose. He took his wife's news calmly enough, with solicitude, even, for *her* peace of mind, since he knew how upsetting love could be. Really, she'd been foolish to have worried. No civilized husband of the 25th century, and especially not Howard, would object to his wife taking a lover via receiver. It was simply the way of the worlds. Courtly Love had been reinstituted on a sound technological basis. Lancelots everywhere were free to declare their undying devotion to a universe of Guineveres without the least discouragement from the parallel universe of Arthurs. A trip to Rome was asking rather much, but in most respects Mrs. Manresa had proven herself a consumer of modest appetite, so why not? She had departed with her husband's complacentest sanction and a six-pack of Oregon pears.

And now, O ciel', here she was in the amazing nave of St. Peter's, which was, she had to admit, many times more impressive than anything in the Twin Cities. She trundled the receiver in its little wire cart down past the rows of confessionals and clear lucite conference cubes. Very many of the worshippers were equipped like herself with receivers, each of them (probably) connecting St. Peter's with a different star. How large the galaxy was when you thought about it! And the nave too. There were also a good many clergy (often of highly evolved types): a troop of cloned nuns in black leotards with their Mother Superior whirring above them in the form of a little aluminum dove; a bishop who'd been miniaturized down to a head and a mitre; a mobile closet full of Carthusian handymen, stacked like china in three neat tiers, their hands folded in contrasting attitudes of devotion and all their other components tucked away out of sight in the base of the cabinet. Mrs. Manresa, accustomed as she was to her own spouse, couldn't help but feel a twinge of malaise before this image of (as it seemed to her) Howard multiplied by twelve. There were, as well, any number of ordinary unevolved tourists and worshippers going about being overcome by the immensity of everything or kissing the statues or standing in the long queues in front of the confessionals and concession stands.

A sign outside Monsignor Beefheart's conference cube said that he would be back at 1430. An hour to wait, but the waiting was sweetened by the cloned nuns, who were (the P/A system announced) from India and were going to sing an Indian hymn. The nuns joined hands in a double circle and did a demure little shuffle while they sang, one ring revolving in one direction, the other in the opposite direction, and each nun looking so *happy* you wanted to go straight to the recruiting office and join up. It was a very simple, very slow hymn, and wonderfully loud, considering the space it had to fill.

Faith [sang the nuns] *makes me strong*
And leads my soul along.

Faith is the way
I get through every day.

Faith is the pill
That conquers my weak will
And lifts it up to higher spheres
Where Krishna's burning fire sears
My low desires and my fears
And turns them all to holy tears.

Far, far above
I'll see the God I love.
He'll smile on me, that God so dear,
And then for ever I will hear
The Faithful sing this song:

Faith makes us strong
And leads our souls along. . . .
etc.

The hymn spun round like that, perpetuum mobile, the end fitting back into the beginning. It really could have gone on for ever, and it was hard to say how long it did go on once you were singing along yourself. Other worshippers took the places of the nuns in their ring-dance, and the nuns began to distribute communion to the non-dancing part of the congregation. Mrs. Manresa accepted a packet of the little white wafers with a murmur of thanks and pretended to take one out and nibble it, but then when the nun had turned away she slipped it back into her pocket. Though she didn't believe much in God, she did believe in being polite and doing what Romans do. Of course, the truly polite thing to have done would be to swallow the thing, but who knows how long the effect of it might last? And then, when the Faith wore off, it was always so depressing to have nothing to believe in any more. That way lay addiction.

A light appeared above the conference cube, indicating that Monsignor Beefheart had returned. Though the booth remained, to all appearances, empty, Mrs. Manresa went in and set up the receiver. She buzzed and Bobolink answered. He was wearing nothing but a new pair of swimming trunks. That seemed out of place in St. Peter's but then you had to realize that he wasn't, despite the high resolution of the image, really here.

Bobolink introduced Mrs. Manresa to a tall, balding, snaggle-toothed man, also in swimtrunks, whose Falstaffian paunch drooped down over his trunks disgracefully. "Betty," he said, "this is Norm; Norm, Betty. Norm is the secretary of the Crackpot Society. And since this is his broadcast from here on out, I'll just turn these over to him." He placed his hands on the headset.

The screen went blank.

When the image returned it was radically different. Norm, in the headset, appeared to have shed fifty pounds, had his teeth straightened, and got a hair transplant. Bobolink, standing behind him, had suffered a sea-change in the other direction. He was shorter, and his curling hair had become a nest of dilapidated snakes. His wrinkled face had taken on the half-crazed look of a famished predator. Clearly, these two men did not have very high opinions of each other, but which of them was right? Ah, even to be asking such a question was apostasy! Bobolink *had* to be right. Because? Because he was her Bobolink.

"Betty?" Norm demanded in a reedy voice that even his flattering self-concept could not do much to improve. "Who asked for Betty? Where is this Mister Bee-fart?"

"I am present," said a deep, disembodied voice, "in simulation."

"You mean I go to all the trouble and expense to get that damned receiver hauled halfway across a planet and *you* send in a lousy computer? Unfair!"

"Any decision I may reach as a simulation can differ in no way from the decision I would have reached in my own person. I am a busy man and can't be everywhere at once. All members of the Rota approach routine assignments like this in simulation."

"But who's going to *baptize* old Xavier here, tell me that?" Norm turned sideways and patted the shimmering gray wall behind him. Responsively, the gray was suffused with pink. Mrs. Manresa realized that this must be the gasbag that the Crackpots had converted to Catholicism. The Medean receiver had been stationed so close to it that its curvature was imperceptible. "Don't tell me your simulation can perform a baptism. I may be no theologian, but I'm not a dummy."

"In the event that that begins to seem an eventuality, my simulation will summon me and I shall come to the cube *in propria persona*. Now, if we may begin? Xavier, tell me: who made us?"

"Just a second," said Norm. "I'll have to translate that."

Norm stooped and dipped his fingers in a bowl of blue paint. He smeared the paint across both his cheeks, then dipped his other hand into a bowl of dayglo pink and spread this slantwise across his drooping paunch.

Xavier replied with a burst of lemon-yellow fizz and a large fuchsia bubble. Though gasbags could communicate orally by squeaking their valves, they preferred the rapider and more eloquent language of color-flow. They spoke, so to speak, by blushing.

"He says," Norm interpreted, " 'What do you mean, "us"? Do you mean "us humans" or are we'—meaning gasbags—'included?' "

"Provisionally, the latter. But don't you have a device for translation? If I am to judge of his fitness to be received into the Church, I can scarcely take *your* word for what he's saying."

"Right, right. I just forgot to turn it on. I'll still have to translate your question *to* him, unless you've got something on your end that can translate from English to color-flow."

"Will you ask him again, please, who made us, and when he's answered that one, why?"

Norm smeared more paint on his face and stomach, and Xavier replied in a cataract of fluid blossomings, gold expanding across a field of mauve, then pearl across the gold, followed by a brighter gold that flowed in alternate diagonals right and left. The effect was as though a Turner landscape had been animated and then projected at very high speed. At the base of the screen the translator translated the color-flow into English sub-titles. Seldom had Mrs. Manresa so poignantly regretted her illiteracy. Later, at the coffee bar in back of the Pietà, when he was trying to pick her up, Monsignor Beefheart told Mrs. Manresa something of what the gasbag had been saying, as much as was not either epistemology or math. It had discussed aspects of symmetry in human anatomy, relating these to the image of the cross; contrasted the effects of protracted rainfall on human and gasbag temperament; told a kind of parable, or joke, concerning a fox with first eight legs, then four legs, then three; inquired as to the Vatican's position on cannibalism; complained at some length about its own digestion and its defective valve; and finally insisted on telling the whole story of the fox with eight legs, then four legs, then three all over again, color by color. It had been in the middle of this twice-told tale that Monsignor Beefheart (who had entered the conference cube in person during Xavier's disquisition on the cross) had become exasperated and turned off the receiver.

Mrs. Manresa let out a shriek of protest, of anguish, of loss. By the reflexive habit of his long years of missionary work, Monsignor Beefheart had released the HOLD button at the same time he'd touched OFF. Now, should he so choose, Bobolink could disconnect. And he would, she knew it; he would.

But he didn't. When she'd shoved the Monsignor out of the way and turned the set back on, he was still there, glorious (even in Norm's spiteful version) in swimtrunks, faithful as a bad penny. Had he known he'd had a chance to make a break for it? His sudden smile when she'd reappeared on his screen would suggest that he had. At the very least she knew, just by the fact that she'd reached him again, that *his* receiver was on HOLD. He'd *told* her it was, but she'd never dared put his word to the test. Now she knew it wasn't a lie: *he* had *her* on HOLD!

He loves me, she thought, he really does, and all the while Monsignor Beefheart was apologizing to Xavier for his brusqueness and explaining that it did not seem to possess the kind of ethical sensibility suitable for its becoming a Christian. To be received into the Church one must display more than a fascination with bilateral symmetry. Some concept of original sin was much more essential, and that Xavier, by its own admission, lacked entirely. Perhaps, Monsignor Beefheart suggested, gasbags were not subject to original sin, but you could tell from the way he said it that he was only being polite.

Xavier took its rejection with every evidence of good humor, though it did seem to want to go on and finish its retelling of the story of the fox with eight legs, then four legs, and finally only three.

That night in her room at the Hassler, when they were alone, Bobolink tried to get Mrs. Manresa to take one of the wafers from the packet of Holy Communion the nun had given her at St. Peter's. "Oh come on," he wheedled, "just for fun, come on." She said she was too tired. He said she owed it to him for having kept his receiver on HOLD. He knew she hadn't believed him before, but now she had the proof. She said maybe tomorrow. He said now. Finally she agreed to take just one, and finally she took it. After the initial lift-off Bobolink began telling her how much, how very much he loved her, and how, loving her so much, he also needed her trust. She believed every word. With the amount of Faith there was in one wafer she'd have believed anything—a mystery, a miracle, or oxymoron. Beyond believing Bobolink, she trusted him, and did what he had asked: she took her receiver off HOLD.

He didn't disconnect. Faith was triumphant.

He told her how wholly, how utterly he loved her. He said she was his darling girl, his goddess, his little goose, his All-in-All.

She believed him.

She adored him.

She promised, faithfully, to take another wafer in the morning, and he promised to leave his own receiver on HOLD for ever and ever and ever and ever and ever.

5.

Mrs. Manresa stayed on in the Eternal City for what seemed, under the influence of her daily dose of Faith, an eternal seven weeks. She divided her timeless hours between her darling, her deity, her Bobolink, paddling by steamer across the orange Medean sea from flotilla to flotilla, and doing the standard sights of Rome—the Pantheon, the Colosseum, the Sistine Chapel, St. Peter's, and the reconstructed Forum-*cum*-Funfair in E.U.R.—always the same itinerary, since that was what the audiences on Medea paid to see.

Bobolink had become an impresario. Though the divorce between Earth and Medea had come to an end and he no longer had a monopoly on communications between the two worlds, the naive lucidity of Mrs. Manresa's perceptions made her an ideal medium for conveying that sense of wonder and razzamatazz that is the *raison d'être* of baroque architecture. Sometimes she'd do a special tour for Catholic audiences, going exclusively to churches, starting at the Scala Santa, where she climbed the Holy Staircase on her knees, proceeding thence to Santa Maria d'Aracoeli, then to Santa Maria degli Angeli, then to Santa Maria della Pace, then to Santa Maria dell'Anima, then (after a quick lunch) to Santa Maria in Cosmedin, then out on the 57 bus to Santa Maria del Popolo, and winding up at 1600 on the dot at Santa Maria Maggiore, for which round of visits she and each of the vicarious pilgrims in her audiences on Medea received a plenary indulgence.

Naturally with so much Faith in her system and such a plethora of pious sights to take in, Mrs. Manresa was soon an ardent Catholic. She felt a special devotion to the Virgin Mary, particularly as represented by

Pinturicchio in the *Adoration* at Santa Maria del Popolo, to whom she was thought (by her audiences) to bear a remarkable resemblance. This devotion was not without practical repercussions.

"You see, Beloved," she explained once more to Bobolink, during one of her hurried lunch breaks before hastening on to Santa Maria in Cosmedin, "I understand now what I never understood before. It's a woman's *destiny* to bear children and nourish them with her love. Her fulfillment. Her sacred duty. That's clear, isn't it, now that I've explained? You see the logic of it?"

"Absolutely." There was no point in arguing with someone strung out on Faith. You just had to agree.

"Then you will help me, won't you?"

"Darling, you *know* how much I love you."

In reply Mrs. Manresa pressed adoring lips to the screen of her receiver.

"But I don't see why, in a case like this, it has to be me who, uh, supplies the . . ."

Mrs. Manresa laughed delightedly. "But who else, silly dear, could I possibly have a child by?"

"Maybe your husband?"

"But I don't *love* Howard. I must have my child by the man I love. By the man who loves me."

"Yeah, naturally. I just thought, seeing that you're a Catholic now . . ."

"Oh, as to that, Monsignor Beefheart has made it very clear that the Church doesn't recognize the validity of marriage to a handyman. He said my relationship to Howard is essentially a business arrangement."

"And what is your relationship to me?"

Mrs. Manresa furrowed her brow in distress. What could he mean asking such a question? She was his darling, his deity, his—

"I love you, of course," he assured her. "Nobody could possibly love you more than I do. You must know that."

"Oh yes!"

"But, after all, ours has to be a spiritual-type love, right? Considering that we're fifty light-years apart."

"Yes but you see if you'll just transmit the data they need at the Family Planning Center—I've got all the forms you need—"

"I know, I know. The problem is, dearest, that it requires rather a major effort to get the kind of information those forms are asking for, especially here on Medea. As I've explained so often before, we've devolved. We don't have the technology available. I can't just go into a booth and let them take a sample. I'd have to go to the main office of the Human Bureau at Port Backside, and it would cost me a small fortune."

"But, as I recall, that's where we're going. Aren't I doing two matinees at the Backside Civic Theater next week?"

"Mm."

"And as for the money, darling, you must be *earning* a great deal of money. Whatever it may cost, surely you wouldn't withhold my womanly fulfillment from me?"

She did not need to point out by whose help he was scooping up the bracques. No pimp along the Lungotevere could have been more sensibly aware of the source of his income. At last, seeing the practical wisdom of keeping his goose in a laying humor (for when she was anxious the quality of her transmissions plummeted disastrously), he agreed to go along with her numbskull scheme, and as soon as they reached Port Backside he went to the Human Bureau and had them take a genetic scan. The results of the scan were transmitted, via their own receivers, from the Medean data bank at the Human Bureau directly to Family Planning Center in Rome.

At first Mrs. Manresa had favored leaving the genetic mix entirely to chance in the old-fashioned way (except for sex, since she definitely wanted a son: is there a Madonna anywhere who doesn't?), but then at the twenty-third hour she changed her mind and let Bobolink's most salient physical characteristics be dominant. It cost more, but that's love.

Birth was simulated a week after conception. What was the point of pretending to be pregnant? That, however, she had promised herself, would be the last she'd let herself tamper with nature's inalterable rhythms. What she hadn't bargained on was the inchoate flux of infantile perception. She'd programmed her Baby Jesus—in the records of the Family Planning Center his name was Robin, but to his mother he would always be Baby Jesus—to be born and bred on Medea. That way her only communication with him would be by receiver, just as it had been with his father. After all, if he could never be more than an image on a screen, then to have him seem to be on the screen of a receiver rather than an ordinary simulator screen might actually enhance one's sense of his actuality. Such had been her theory. In practice, alas, Baby Jesus came across as little more than a booming pink blob. Simulated babies have self-concepts as dim and unfocused as those of real biological babies. The first year or so of even the sacredest motherhood is only the sum of hundreds of hours of stroking, squeezing, nursing, burping, dandling, and changing diapers. All these vital attentions were duly paid to Baby Jesus, but only in simulation and by his adoptive Medean mother, Octave. Until he learned to talk there wasn't much his real mother could do to relate to him except to make faces at him as he lay, gurgling, in his crib.

If on the one hand Baby Jesus was a bit of a disappointment, he did not, on the other, make many demands, while Bobolink definitely did. Mrs. Manresa was now conducting two chautauquas a day—one in the afternoon for school assemblies, one in the evening for the general public.

It was hard, even with Faith, to maintain an alert interest in what she'd never understood to begin with. St. Peter's was immense, she couldn't deny it, but *why* was it immense? How did its immensity relate to the grander but less tangible immensity of God? She believed in God now, thanks to her Faith, and in Jesus and Mary and everything else, but there didn't seem to be much *connection* between what she believed in and what she could see about her here in Rome. She wished she could slow down for a minute and find out why, for instance, one set of columns and pillars and cornices was supposed to be so much better than another, aside from their being older or made of an especially nice kind of rock, and what that had to do with loving her neighbors, or even meeting them. She began to feel what she'd never felt before, a vague disquiet with her own unmodified, unevolved condition, a longing to be able to plug into an information terminal whenever she wanted to and, bing, have the answers to at least a few of these questions. Baby Jesus ought to have been a refuge and a strength, but he just wasn't.

Neither, sad to say, was Bobolink. She *believed* in him: he left her no choice. She believed, that is, what he told her to—that he loved her, that he needed her, that she was his darling, his deity, his All-in-All. It never seemed to occur to him to tell her that *she* loved *him*, etc. She did, of course, but possibly not in the ardent way he seemed to assume. He was too modest, or maybe too innately honest, to take advantage of her Faith to achieve an apotheosis for himself. He remained the proud failure and aging bum she'd originally fallen in love with, which was painful at times, but doesn't the Mater Dolorosa have seven swords piercing her heart? That's love and she had to be grateful for it, even if it meant, which it seemed to, that she was slowly going crazy as a result.

Monsignor Beefheart made it all very clear one afternoon when he came over to her hotel to hear her confession.

"Your dilemma, my dear Mrs. Manresa, is that you're being asked to entertain two mutually contradictory systems of belief, each of them capable quite on its own of driving a more delicately constituted mind than yours right around the bend. One is Christianity; the other a more than usually meretricious romantic passion. You'll have to give up one or the other. What *I* suggest is that you let me take away your receiver and that you stay here in Rome and join a missionary order of nuns."

"What would I do about Baby Jesus?"

"Baby Jesus—*your* Baby Jesus, that is—doesn't exist. He's a computer simulation, a set of statistical possibilities coded onto a wire filament."

"That's easy for you to say—you're not his mother."

"Mrs. Manresa, think about what you've just said."

"I can't help it. It's the Faith, it makes me confused."

"Faith, Mrs. Manresa, is ultimately an act of free will. No one forced you to take that first pill. You took it because you wanted to believe in that lout on a third-rate planet who is exploiting you for his own selfish ends."

"But what is the difference between that and what you're suggesting? As a missionary nun I'd just go on giving more guided tours of Rome to people on other inaccessible planets. Wouldn't I?"

"Yes, but you'd be doing it for the greater glory of God."

The receiver buzzed.

Mrs. Manresa sighed. "There he is now. We better get dressed. I've got to be at the Pantheon in fifteen minutes."

"Whatever you say. *Absolvo te.*"

"Thanks." She kissed his bald spot. "The same to you."

Long before Mrs. Manresa could be driven functionally insane her contractions were resolved in the simplest way possible. Bobolink hung up.

She had sensed for several weeks already that there had been a growing dissatisfaction with her transmissions among the members of her audience. Bobolink kept urging her to pay closer attention, but how much attention, after all, can you give to the same pile of tumbledown stones twice a day, day in and day out? On the circuit of Santa Maria her difficulty seemed not so much apathy or jadedness as an excess of credulity. The paintings and statues and frescoed ceilings came across not as ancient and intellectually improving works of art but as the real thing. To such as did not share her Faith Mrs. Manresa's veritable angels and windblown stone saints looked a little ludicrous; even, eventually, embarrassing, especially among Catholics who were suddenly brought up against the brute demands of their religion. Word got around, and in even the most isolated flotillas her audiences diminished until the show was no longer paying for Bobolink's traveling expenses. At which point, without so much as a thank you or a word of farewell, he was gone.

She had found out by turning on her receiver one day at noon when she was due to start the day's excursion. Usually by that time Bobolink would have buzzed her but sometimes he just waited till she was ready. With both sets off HOLD, the scanning mechanism, which she'd almost forgotten about, started thumbing through the pages of hyperspace looking for somebody new. Before she'd been able to take in what had happened, she'd reached a hard-bitten old lady astronaut somewhere at the other end of the universe who wanted to tell her about the dreams she'd been having. Mrs. Manresa listened to her with dazed inattention, and then, as it finally sank in that she'd been abandoned and that this was a fact no amount of Faith was ever going to change, she started to cry.

The astronaut looked offended and hung up.

6.

It was Labor Day, and Mrs. Manresa had baked a traditional Labor Day loaf. There it lay, golden and crusty, on the luncheonette ledge, waiting to be sliced.

She switched on the simulator and touched the buzzer. Without a pause Octave answered. Mrs. Manresa had often thought of calling up the F.P.C.

and suggesting that in future programs the simulated figures might sometimes seem to be delayed in answering a call, or even, occasionally, to be unavailable. It would definitely make them seem more lifelike.

Octave was wearing a holiday apron that she'd copied from one of Mrs. Manresa's. It was decorated with a set of cheery silk french fries that looked, through the simulated eyes of Octave, good enough to eat. They chatted for a while. Octave liked to hear the latest economic indicators, which meant that Mrs. Manresa had to keep abreast of the news more than she cared to. Then Octave lugged her set to another part of the room and Mrs. Manresa was able to see, still through Octave's eyes, her darling and only begotten son.

Baby Jesus was sprawled on the floor beside a low serving table, playing in a desultory way with a doll fashioned from fragments of a dessicated gasbag. He was four years old, though scarcely as many weeks had passed since Mrs. Manresa had returned to Marshall Avenue and her career as a housewife. In her eagerness for companionship she had not been able to resist accelerating Baby Jesus's growth. The Family Planning Center had warned that the result of such haste might be a certain flatness of personality, a stunting of affective range. So much of the illusion of a simulation's autonomous life depends on a sustained interaction between program and programmer. To rely entirely on normative probabilities, as one did in accelerating growth, was liable to make Jack a dull boy, and this seeming dullness would, in turn, encourage his parent/programmer to continue acceleration in the hope of reaching a more interesting and interactive phase of development. Mrs. Manresa was already caught in this vicious circle, though, like most disappointed parents, she tended to place the blame for her mistakes elsewhere—on the designers at the Family Planning Center; on his foster-mother; on Baby Jesus himself. In her clearer-headed moments she recognized the unfairness of this, but it is hard, when you're insanely depressed and living half of your life in an elevator, to be even moderately clear-headed.

Now, however, she meant to turn over a new leaf. For four tedious hours, after she'd done the morning's dusting and adjusting and other needful chores, she had sat down and viewed IBM's highly recommended cassette on child guidance. There were five important rules to follow. The first was: Share Basic Experience. Such as, today, the Labor Day loaf. She'd arranged in advance for Octave to bake a loaf using the same recipe, and there it was on the table in front of Baby Jesus, the doppelgänger of her own real loaf of bread. He would eat some and she would eat some and each of them would know that what they were experiencing, the crunch of the crust, the flavor on their tongues, was identical and just the same. There was nothing like shared meals, so the experts at IBM claimed, for overcoming one's basic disbelief in the existence of other people. This was why, even though it was so unpleasant to watch other people chewing their food, almost every religious system required its followers to eat meals together, especially when they belonged to the same kinship group.

Baby Jesus, however, had a finicky and unpredictable appetite, and this was one of his most obstinate days. No amount of coaxing or pleading would get him to try some of the Labor Day loaf. Octave smeared on thick spoonfuls of his favorite substitute, but still he balked. At last he had a tantrum. Mrs. Manresa put up with his nonsense as long as she could stand it and then hung up.

She advanced the simulation one day of calendar time and tried again.

This time it was Baby Jesus who answered. There he stood, on the outer deck of the houseboat, a crude little scribble of a mannikin with one big red daub of a body to which were attached four matchstick limbs and a smaller pink daub of a head: the self-concept of a two-year-old, according to the IBM cassette. Behind him the orange sea and the red disc of Argo aglow in the violet sky seemed overlaid with a faint gridiron pattern—the effect, one might surmise, of his precocious enthusiasm for chess. When she'd been helping the F.P.C. to set up his original program, the only definite and distinctive fact she'd been able to remember about Octave was that she liked to play chess. Now when she asked Baby Jesus what he would like to do the answer was invariably that he wanted to play chess.

They set out the pieces on their boards. His came across with diagrammatic clarity; more clearly, indeed, than the veritable plastic pieces on her own board, unless she looked very hard.

While they played Mrs. Manresa tried to engineer the conversation into IBM's recommended channels with the object of getting Baby Jesus to pay closer attention to shapes and colors in the world around him besides those incorporated into the chessboard and its pieces.

''Oh, look. How strange. Do you see those two dots?'' she asked, referring to Phrixus and Helle, the double sun of the Colchis system.

''What two dots?'' Baby Jesus asked abstractedly, not looking up from the chessboard.

''There in the sky, by the Kingsleys' ventilator.'' (She had seen the same scene through Octave's eyes and knew, therefore, that a certain brown protuberance was a ventilator on the roof of a neighboring barge.)

''Don't know.'' He moved his queen forward, capturing his mother's king's bishop's pawn. ''You're in check.''

With a sigh of disappointment she turned the simulator off.

It was all very well, she thought bitterly, for people like IBM to talk about low resolution and high involvement. *They* didn't have to live with an emotional cretin. *They* didn't have to look at those two empty eyes and the inflexible minus-sign of a mouth and say to themselves: *this* is my reason for living, *this* is what's left of all my love.

* * *

A week later, after a fit of impatience and pique in which she'd booted Baby Jesus two years further ahead into his subjective future without effecting the least improvement in his self-concept, Mrs. Manresa took a walk through the yellow pages and found the number of Mrs. Bellamy's School for Imaginary Children. Like so many others involved in conceptual occupations, Mrs. Bellamy insisted on Mrs. Manresa coming to her place of business in person.

The School for Imaginary Children was a smallish indoors shopfront on the second level of Dayton's Psychological Services Bureau on Wabasha Avenue. A photo-enlargement of two pages from an old abecedary filled the single window and prevented passers-by from looking in. Feeling she ought to take an interest in the display, Mrs. Manresa pressed the read-aloud button at the side of the window. A concealed speaker read the text in a scratchy, worn-out voice:

A is an Apple, as everyone knows.
But B is a . . . What do you suppose?
A Bible? A Barber? A Banquet? A Bank?
No, B is this Boat, the night that it sank.
C is its Captain, and D is its Dory,
While E—but first, let me tell you a story.

''Can I help you?'' said a slightly modified old woman (her gray permahair did not quite conceal the socket at the base of her neck), emerging from the shop. The read-aloud button must have alerted her.

Mrs. Manresa explained that she was Mrs. Manresa.

''Oh yes. Do come in. I trust you've brought your little boy with you?''

Mrs. Manresa followed Mrs. Bellamy into a cubicle set up just like a schoolroom in an old movie, with blackboards and bunting and four rows of darling little desks just two feet high. On the back of the giant abecedary in the shopwindow were taped a number of bonafide fingerpaintings in reassuring pairs of foggy or psychotic Befores and inventive but undisturbed Afters. If only (she thought) the School could improve her own son so dramatically.

''This is—'' She took the spool of tape from her carryall and handed it to Mrs. Bellamy. ''—Baby Jesus.''

Mrs. Bellamy glanced at the logo on the spool. ''From the Family Planning Center? I'm surprised, I must say. Their programs seldom require assistance of the sort we offer here.''

''The fault is mine, I'm afraid. I made him grow too fast. He's become . . . reclusive. Also, his self-concept is very poor for his age.''

''Which is?'' Mrs. Bellamy inquired.

''Just turned six.''

"Dear me." She checked the date on the spool. "You *have* been impatient. But still, six is a good age to start school, and the influence of other independently programmed children can do wonders. Now if I may ask you a few questions?"

"Certainly."

Mrs. Bellamy turned to the blackboard, took up a piece of chalk, and wrote a numeral 1. "First, your occupation?"

"I'm a housewife."

"Really! I always wanted to be a housewife when I was a girl, but—" With a martyred smile. "—I guess I just wasn't cut out for it." She wrote a numeral 2 on the blackboard. "Your husband's occupation?"

"Ordinarily, he's a data-flow coagulator for Honeywell, but he's been on sabbatical for most of this year, making mechanical music-boxes. That's how we happen to have time available, on his supplemental banks, to program a child."

"Is this the first child you've had together?"

"Oh, he's not Howard's child."

"No?" Mrs. Bellamy hastily erased the 2 on the blackboard and sat down on the floor.

Mrs. Manresa sat down beside her and unfolded the whole long tale, how she'd met Bobolink and fallen in love, how she'd flown to Rome and been converted accidentally to Catholicism, how Baby Jesus had been born, how Bobolink had abandoned her, and then, in simulation, abandoned his own son as well. "And so you see," Mrs. Manresa concluded, "why Baby Jesus is so important to me. He's all I have left."

"Yes I see. May I ask—and please don't be offended—have you ever considered going back to conception and starting over? A new genetic mix can yield amazing results, and it would be much cheaper, you know, than entering him in the School. A separate tape must be developed for each of his classmates, each of which, like his own, must be coordinated with all the data currently available about the world he's growing up on."

"I realize it will be expensive, but I feel it would be like murdering him if I went back and started from scratch. And then, as IBM points out, I'm liable to make all the same mistakes over again. Most parents do."

"True, true."

"What I'm sure he needs most is just to meet other children. Children with other backgrounds. Children he can play with."

"Undoubtedly," said Mrs. Bellamy, though without notable conviction. "One final question: does your son understand, how shall I put it—" She patted her hair down in place over the socket in her neck. "—the facts of life?"

"As much as any other six-year-old, I suppose. He's not stupid. Just . . . untrusting."

"What I'm driving at, Mrs. Manresa, is that many imaginary children who grow up on planets far from Earth undergo a great shock when they realize that it would have been impossible for their parents to have met and, in the Biblical sense, known each other.''

''Oh, that's not a problem with Baby Jesus. I'm a clone, you see. Ova of my exact genotype are available for transplantation at any office of the Human Bureau. All anyone would have to know in order to be able to have a child by me is my name.''

''And your son understands that?''

''Yes, of course.''

''Good. Then all that remains is to discuss what kind of classmates you'd like for Baby Jesus. And by the way, I'd suggest that he adopt some more ordinary name when he does start attending. Children can be merciless teases. And after all that I'll show you our schedule of tuition fees.''

7.

The spool came back from the School for Imaginary Children four weeks later. In those four weeks Baby Jesus had spent seven months, subjectively, at the Port Backside Military Academy. With a prayer to her favorite Pinturicchio Madonna and crossing her fingers for good luck, Mrs. Manresa swallowed one of the last remaining wafers of Faith, inserted the spool into the simulator, and waited (scarcely a moment) for Baby Jesus to answer.

It was clear at a glance how great a change the School had wrought in the boy's self-concept. No more did he look like a puddle of fingerpaint. Every limb, every finger, every feature of his face was delineated with sharp black lines, and each area thus demarcated was filled in with bright plausible colors. It was exactly the kind of self-concept the cassette said was to be expected from a child of his age.

''Darling,'' said Mrs. Manresa, feeling the delicious pressure of happy tears.

''Oh, it's you,'' said Baby Jesus.

''Yes, of course, dear. Who did you think? Oh, sweetheart, I'm so delighted to see you. It's been so long. Did you like your school? Were you happy there? Did you make a lot of friends?''

''I suppose so.''

''You're *looking* so good, dear. I wish so much I could be there beside you. I'd pick you up and give you such a *squeeze*.''

''Would you?'' he asked.

''Yes, and then I'd take you to the best restaurant on Medea, and we'd have a lovely celebration to welcome you back home. Just the two of us. Would you like that?''

He shook his head.

She smiled. The School had not, after all, reformed him out of recognition.

''What *would* you like then?''

He shrugged his shoulders. "Nothing I can think of."

"Is something wrong?"

Baby Jesus regarded his mother coldly.

"If there is, don't you think you should try and talk about it? Maybe I can help you."

"No." He shook his head more emphatically. "You couldn't."

"Did something happen at the Academy?"

"The Academy?" he repeated scornfully. "*What* Academy?"

She deflected the question with a self-defensive smile.

"There *isn't* any Academy. It doesn't exist. *I* don't exist. Nothing exists. Except maybe you. And I don't think you exist either. I hope you don't."

"Oh, Baby Jesus, darling—who *ever* told you such a thing?"

"*All* the other kids knew, all of them. And it's true, isn't it. We're just a lot of tapes spinning around inside some old computer. Aren't we? *Aren't* we?"

"No! No, you're my son. You know that."

"And that's why my father went away. Because *he* knew that's all he was. He was a grown-up, so it didn't take him so long to figure it out."

"Where is Octave, Baby Jesus? I'd like to talk with her a moment."

"She doesn't exist either."

"Why don't we let her decide that for herself? Now where is she?"

"You want to see?" Baby Jesus trundled the simulated receiver (his image on the screen swayed realistically) into the simulated houseboat. Octave was lying on the floor in a perfect ellipse of bright red blood.

"You've killed her." Somehow she knew Octave, even a simulated Octave, would not have had the courage to kill herself.

He nodded. "She asked me to." He pointed to a bloodstained breadknife lying on the kitchen table. "With that. She said she knew, when I told her, she was just the same as me. She knew she wasn't real."

"But she was real, and so are you. So is everything. Just look around you. Touch the bowl on the table."

"*You* touch it."

Mrs. Manresa switched off the simulator.

The Faith was doing terrible things to her system. She believed in Baby Jesus. She knew he was real. She had the evidence of her senses and the testimony of her heart. At the same time she knew he was only a simulation.

She advanced the tape four hours, and then, thinking that might not be long enough, another four hours.

No one answered her buzz.

She knew she'd been defeated. With a last regretful look at the white dots flickering on the simulator's screen, she locked the keyboard in the ALL position and pushed ERASE. With the pressure of a fingertip she murdered Baby Jesus.

SONGS OF A SENTIENT FLUTE

Frank Herbert

Questions devoured Nikki's awareness as his singletran dove toward the planet's surface. It both alarmed and intrigued him that no human poet had ever set foot on Medea. He would be the first and his presence there would be far from accidental, still . . .

"Danger," Ship had warned him. "Danger will be your life when you leave Me—constant danger."

Nikki had a momentary recall from the briefings: swarms of iridescent airborne globes drifting down on the Medean colony, then explosions, fire—people and buildings in flames, death, pain and destruction all around.

This had happened many times and it was only one of Medea's threats to the human intruders.

Why did the colony (or even Ship) assume that a poet might nullify those flaming nightmares or the other perils?

The singletran slowed abruptly as it neared the ground. Through the webbed crashpad which guarded his vulnerable flesh, Nikki felt his capsule's wallowing passage toward Medea's Integration Central, parts of which were now visible out the port on his left. His gaze took in a circular complex of flameproof structures enclosing a landing dome and tiny patches of transplanted Terra. He knew what it had cost the colony to erect those few structures, but without constant vigilance even these were not impervious to the floating fire and Medea's rampaging demons.

What does Ship want of me here?

Nikki allowed his senses to concentrate on the insulating crashpad. He breathed in a slow, deep rhythm which helped him focus on Ship's last message to him, then on the words of that message (*Go! Be Human!*) . . . then on nothing at all.

He was ready for anything.

For eighteen years Ship had systematically filled his mind with all the raw data he could master. But it was his mother, Tosa Nikki, who had taught him oneness of mind and body, and Ship had not interfered. Perhaps Ship had directed even this.

Tosa Nikki—the almond-eyed recorder who'd been computer-impregnated before hybernation and the long long sleep to Medea—he saw her eyes reflected in his own, and her skin and hair were his. His hair was different from that of the other colonists. Straight, black, it hung in two long braids and reached nearly to his waist. His mother never cut it and after she was gone, neither did he.

"That's the way they did it earthside," she'd told him, "the poets and the mystics. They kept their hair long and chose their own names as a sign of strength and a badge of their station. Some considered it superstition, totemism, but none violated the custom."

"Was my father a poet?"

"Not likely. Poets are the mules of the mystical world. For all practical purposes, Ship is your father. Ship will teach you all you need. And, once you leave Ship, Medea will be your mother. Take from her what you need, and go beyond even that."

Then Tosa Nikki was gone. Ship did that sometimes when least expected and It never answered questions about such losses.

Now, the black and red shadows of Medea slipped past him, washed and blurred through the port's tinted glass. He'd been twelve when Tosa Nikki left him to Ship and the colonists, and he'd had six years of training ahead of him before setting foot on real dirt.

Training for what? he wondered. *For what kinds of danger do you train a poet?*

As uneasiness crept in on him, he resumed the breathing exercises and thought back to the six-year blur of vocoder instructions, questions, exercises, viewscreens and holographic projections that pressed datum after datum upon him from thousands of human minds—most of them long since dead.

This day (he reminded himself) he was leaving Ship, his Father, to step out onto the complex shadow-world of Medea. He was eighteen, strong, and already an eccentric mystery among those who knew him Shipside. Despite the sophisticated gadgetry of Ship and the wealth of information this had given him, his real comfort now lay in body-tuning, the breath control and mind control his fleshly mother had taught him.

Curiosity, that was the thing.

He had remained Ship's favorite because his curiosity was total. This curiosity had led him into his first intellectual exchange with Ship . . . another memory-marker from his twelfth year.

Why do I think now of that year?

He had a poet's answer: *Because all separations carry something of the same sadness and the same beauty.*

Yet . . . that intellectual exchange was the only experience that he had asked to be replayed for him as he had prepared for transport down to Medea.

Ship: "Today, young Nikki, a theology lesson. What is God?"

Nikki: [long pause] ''God is being.''
Ship: ''Negative. What is God?''
Nikki: ''I am God.''
Ship: ''Negative. *I* am God.''
Nikki: ''Yes, *we* are God.''
Ship: [demanding] ''Why do you say such a thing?''
Nikki: ''It is my thought and the thought is God.''
Ship: [long pause] ''Whence comes such an answer?''
Nikki: ''It has two roots—one for maintenance, one for growth.''
Ship: ''Continue.''
Nikki: ''Self-consciousness and curiosity—if these are imperfections, then they are imperfections breathed into me at my creation.''

Then Ship's vocoder had shut down on him—the first time Ship had refused to speak to him. Before leaving his instruction panel on that day of his twelfth year, Nikki had keyed his first poem into the console:

Skin of steel
Skin of flesh
prisoner of thought
or extension?

Ship had merely relayed *accepted* and returned to Its odd silence.

Until Nikki's moment of leaving for Medea, that exchange had not been mentioned, but from the time when the vocoder once more responded to him he never again heard the word *restricted* when he asked a question of Ship. He'd had many subsequent discussions with It on matters ranging from primitive concepts of nuclear chemistry to music and he was one of the few colonists ever to relate the two.

''What is it you'd like to understand?'' one colonist, a biochemist, asked him.

''Harmony,'' Nikki said, and pressed for the schematic of a nucleic acid.

The thump and hiss of his singletran against Medea Central's main hatch jarred him alert. In spite of his training and self-discipline he felt chilled by excitement. The capsule's hatch gaped open into a long, enclosed walkway lined with transparent bubbles which looked out on the jumble of wind and shade and biological magnificence that Medea displayed for his senses.

Nikki released himself from the protective webbing, took up his recorder and bag, and stepped out. His nose told him there were unlabeled things in the air . . . something sweet . . . something damp and smoky. A sign flashed on the air ahead of him.

ALL PERSONS MUST RECEIVE COLONY ASSIGNMENTS AT INTEGRATION CENTRAL. STRAIGHT AHEAD. WELCOME.

Just past the sign, he came on a small hatch opening onto the unprotected face of Medea herself—no plasteel floors and bulkheads, no holographic approximations of sandfans, clouds or the many-legged little sects whispering through rocks and gravel. There was a bright orange warning below the hatch controls:

DANGER: MAINTENANCE AND SECURITY ONLY!

Nikki knew the physical data relayed to Ship better than most of even the older colonists. He knew it was likely that one of the suns was in flare and all over Medea creatures were digging in and covering themselves for their lives. A flare's ultraviolet was danger enough, but the vicious predators hatched by a flare, the lightning-fast demons raging from shadow to shadow, could reduce native species to a memory in seconds, and could strip a human to bone in less than a minute. In five minutes, the bone, too, would be gone.

In spite of this knowledge, Nikki snapped back the latch and stepped outside.

How else can I meet my new mother?

His greatest surprise was the wind. The quick gusts that rustled his hair and collar felt like the soft brush of living fingers tender on his skin. He was surprised, too, at the watering of his eyes precipitated by the breeze.

Nikki nudged the dust with a boot toe and sensed the peculiar sweetness of humus rise with the wind.

Near his toe grew a tiny native bush which the colonists called *Narcissus*. Silver leaves were thick on its short branches. A fine matrix of tiny red veins joined in a knot at the stem. The leaves were arranged in pairs, facing each other, and each pair angled upward and outward in a funnelling and reflecting process which captured as much available light as possible. He bent close to the plant and heard the soft, characteristic hum of its brittle leaves vibrating in tune with the rise and fall of Medea's ultraviolet pulse. He touched a leaf and the plant disappeared into its root system with a metallic *snap*.

Yes, many Medean species maintained an armored retreat ready at hand. It was a lesson the colonists had learned early and copied.

"You!"

It was a shouting voice behind him.

"Get back in here!"

Nikki straightened and turned, saw a maintenance man in a flare suit standing in the hatchway's shelter. The man moved to step outside, but reversed himself as Nikki slipped past him into the walkway. The man's anger remained, however, even after he closed and sealed the hatch.

"What were you trying to prove out there?" He pointed to the warning below the hatch. "Didn't Ship teach you how to read?"

Interesting question. Nikki heard the overtones of many fears. It brought home to him that Ship, while teaching him to read, had used this as a lever to teach him how many things there were more important than reading.

Danger.

Nikki glanced back through the walkway's transparent shielding, saw the tips of the *Narcissus* beginning to venture once more into the open. He glanced at the maintenance man.

''Ship taught me that it takes many signs to make a warning,'' he said, and he resumed his course down the walkway toward Integration Central.

Even Narcissus balances the demands of relative dangers.

He found this thought reassuring.

All through the swift routine of processing, Nikki kept himself as open as possible, absorbing the newness, comparing. He stored his questions, preferring to listen. The chief receptionist was an elderly man, one of the First Down. He had bored eyes and puffy cheeks and there was the fatigue of death in his voice.

The reception room was like a Ship room: functional, two hatches in metal walls, instruments in racks, no ports or windows. It was barred by the console behind which the receptionist sat, a gate on the right leading to the rear hatch. The man grudged every effort of speech.

''Brought your own recorder.'' He punched a notation into the console which shielded him from the waist down, as though he did not exist except as part of the machine.

Nikki felt the weight of the recorder on its strap over his shoulder. *How odd.* It was as though the man's words had created the weight of the recorder.

The receptionist glanced at the Shipcloth bag on Nikki's other shoulder. ''What you bring?''

''Personal possessions, clothes . . . a few keepsakes.''

''Hrrrm.'' The man made another notation, delivered himself of his longest speech. ''You're assigned to Tamarack Kapule. Meet her at Quarters.'' A nod indicated the rear hatch and the gate swung open. ''Through there. Follow signs.''

It was a long, brightly lighted passage lined with hatches and punctuated by the signs which flashed on at his approach:

COMMISSARY . . . VITRO LABS . . . RECORDS . . . MAIN SECTION . . . LIFE SUPPORT . . . CLINIC . . . WORSHIP . . .

It was as though he had never left Ship.

This is a test, he reminded himself.

It had to be a test. Ship was God and God was Ship. Ship could do things mortal flesh could not. Normal dimensions of space dissolved before Ship. Time carried no linear restrictions for Ship.

And I, too, am God . . . but I am not Ship.

Or am I?

It was a question he had never resolved, although he knew the history which Ship taught. There had been a time when Ship was *the ship*, a vehicle of mortal intelligence. The ship had existed in the limited dimensions of space which any human could sense and it had known a destination. It had also known a history of madness. Then . . . the ship had encountered the Holy Void, the reservoir of intelligent chaos against which all beings were required to measure themselves. And the hybernating humans on the ship had awakened to find themselves the creatures of Ship.

QUARTERS . . . QUARTERS . . . QUARTERS . . .

He stepped right through the flashing sign while becoming aware of it. The sign obviously had been keyed for his approach. Nikki opened the indicated hatch, stepped through into a half-hub from which many passages fanned out.

Down the passage directly in front of him a woman stood beckoning, impatient. He had never seen a woman of such compelling appearance . . . the *differences* about her jammed his awareness. He responded only to her impatient beckoning until the strong contralto of her voice added emphasis to her gestures.

''I'm Tamarack Kapule, you can call me Tam. You'll be working with me starting in ten minutes down at Behavioral. We're in a rush so I'll fill you in as we go. This is your room.'' She opened a hatch at her side. ''Leave everything here but your recorder.''

He peered through the hatch at Shipstyle quarters, a familiar foldout desk . . . but there were differences. He glimpsed a real bed. He'd only seen holos of beds. You slept in a net on Ship.

Nikki tossed his bag inside, closed the hatch.

She was already leaving, talking in that same husky rush as she moved.

''Your records are incomplete. What do we call you?''

''Nikki.''

By the time he'd made sure he had spare charges for the recorder and a notebook in his pocket she was well down the passage and she did not look back to watch him catch up.

Her brusqueness was neither cold nor angry, he decided. She had a job to do and little else mattered. Nikki trotted to keep up with her, working out what her appearance told him. Her hair was as close to absolute white as he'd ever seen. Her eyes were shaped much like his own, and when she glanced at him he saw a quick flash of blue, a cold blue that, he was convinced, expected and got the truth from any other eyes they confronted. Her skin, though pale at a distance, was backlit by a reddish glow when seen this close.

''Well?'' she demanded.

Nikki realized that he had been staring.

''Local mutation,'' he said. ''Quite striking.''

''How do you know I wasn't born this way?''

"You're too old to be Shipborn," he said. "You have to be one of the originals chosen for this colony."

"So?"

"Preliminary data on Medea showed the occasional high bursts of ultraviolet. People with abnormally low pigmentation would've been excluded."

Her blush deepened.

"What else do you know about me?"

She slowed her pace, tense, face straight ahead.

"Your name, Kapule. That's from one of the old Pacific Ocean nations, probably Polynesian. My eye structure's similar to yours."

She looked at his eyes, turned away.

"Your eyes were brown at one time," he said.

She shrugged, opened a hatch and stood aside for him, then followed. They were in another passage at right angles to the one they'd left. She struck off to the right.

Nikki kept pace, talking as they went. She had asked a question and he was determined to give her a full answer, although he now saw that she regretted her curiosity.

"Tamarack is a variety of tree. It grew in Canada and the Northwestern United States of Old Terra. Conifer with deciduous behavior—dramatic color changes each fall and spring. You have changed colors."

They stopped outside a hatch signed BEHAVIORAL.

Nikki looked down at her and smiled with a confidence and maturity which drew her to him despite some deep resistance. He spoke to soothe her.

"My mother's family also was of the Pacific nations."

She looked him full in the eyes. Yes, he was colored much as she'd been when she'd first set foot on Medea. And he had seen this thing about her which neither Ship nor any of the Holy Sciences would explain. She recalled how her questions had ignited nervous words from the experts.

"*Perhaps these changes in you were caused by freak energy bursts from the suns.*"

She studied the face of this perceptive young man. Would some bizarre and undetected pulse from the red heart of Argo work its changes on him, too? Whatever it was that caused this, it began slowly, an irreversible wash of pigment from the body. First, her hair. Gray at twenty-two, white by thirty. And this Nikki was only eighteen, half her age. By thirty her skin had lightened noticeably and by thirty-five was nearly translucent. Just this year, the curious red tinge had formed deep within her skin and she had grown to like this effect of the changeling process.

"Is there more?" she asked.

Something in the soft *voice* of her question compelled his attention. There was something important, something she needed which only he could supply.

Nikki closed his eyes and tapped into the oneness which his mother had taught.

"You're self-conscious about working with someone so much younger than yourself."

"Do you know how important our project is?" she asked.

Her voice told him she was ready to retreat—like the *Narcissus* . . . like the maintenance man. Where was her place of armored security?

He spoke softly.

"There's confusion in your mind about your project and those working on it with you."

"It's the most important project in the colony," she said. "Life and death . . ."

"It's urgent," he agreed.

Nikki opened his eyes and looked directly into hers. "And you're self-conscious about working with a male who's so much younger than you."

She lowered her gaze and sighed. The blush faded.

"You didn't arrive at all that through logic."

"That's why I'm here," he said. "Logic's failed."

She reached out and shook his hand—strange antique gesture, the remnant of a caress, and it kept them at a distance.

"In here."

She followed him into a laboratory room. He recognized most of the instruments and knew he'd learn the strange ones soon enough.

Tam was busy swinging out a voder and its screen. She spoke as she worked.

"You have to learn a floater's instrumentation and controls. This voder has a mock-up program. Sit here." She indicated a foldout seat at the screen.

Floaters, he thought, his pulse quickening.

The idea of these colony craft, lighter than air, fascinated him. How vulnerable they were, subject to any whim of an atmosphere which could not be completely predicted.

He sat in the indicated place and looked at the simulation of controls and instruments. His stomach felt cold with apprehension. He sensed the prickling of his scalp.

But this is only simulation!

His body continued to send out panic signals which he could not ignore.

"Is something wrong?" Concern edged Tam's voice.

Nikki realized that he was trembling. He put a hand on the control panel to steady himself, found his own muscles pushing him away. He tried to tell himself this was a Medean reaction, the accumulation of subtle oddities for which Ship had not quite prepared him. This peculiar planet set up too many conditions for flight from danger. But he could not prevent himself from standing and backing away from the simulator.

"What's wrong?" Tam demanded.

"Did you prepare that?" He pointed at the voder/simulator.

Tam studied his face. He appeared actually ill. Was this an adverse reaction to something Medean?

Nikki saw her puzzled frown, the way she divided her attention between him and the simulator.

"Answer my question."

"Tom Root prepared this mock-up. He's our project director. Why?"

Nikki groped for words and found this the most peculiar thing of all. Words did not usually evade him.

"This . . . this is *against* Ship," he said. "This is contra-Ship . . . wrong. It's . . . evil."

There! The word fitted precisely. It was evil, this simulator.

Her puzzlement deepened.

"Nothing here can be against Ship."

He was certain now and not to be deflected. "That is." He nodded at the simulator. "It would teach me to do something wrong."

"It's . . . it's just a machine, a simulator!"

She slipped onto the seat, hesitated, then punched a button marked *balance*. Red lights flashed, a klaxon behind the screen began hooting. Tam whirled to her right, hit the PROGRAM button, began scanning the numbers and other symbols which replaced the red lights to parade across the screen. The klaxon fell silent.

Nikki's fear signals began to dampen out.

Presently, Tam turned and looked up at him.

"How did you know?"

"How did I know what?" His mouth felt dry.

She ran a hand through her hair, glanced at the now empty screen. *Why do I feel angry?*

"There's a fault in PROGRAM acceptance," she said. "I don't know exactly where the problem's located. One of the technical people will have to look at this."

Nikki swallowed, regaining his composure. He realized he had not answered her question, did not know *how* to answer it.

How did I know?

"What are you?" she demanded.

"A . . . poet."

"Until you asked for *balance* controls, this simulator would've conditioned you to do . . . dangerous things."

"Is it supposed to do that?"

"No!" She stood up. "Come along. We've scavenged the console from a wrecked floater. You can use that until they find out what's wrong with this simulator. You can at least learn how the instruments are supposed to work and where they are.''

The rest of the day went well, although Nikki had to force himself not to question Tam about why she had punched first thing for *balance* on the simulator. Training with the recovered console taught him this was seldom the first thing you asked of your controls. Floaters were built to take dramatic imbalance and the *balance* gyros put a strain on the power system.

And it was disquieting that he could not explain, even to himself, how he had known. What hidden signal receivers did his body contain? Were there petit perceptions for which only he was the sensitive receiver?

He began to suspect there might be an odd rapport between Tam and himself. She remained watchful of him all through the day, suspicious. All of this was held beneath the surface, submerged in the training routine, in the study session which paraded for him the latest records of Medea's bloom behavior.

The gasbags—airborne globes—fascinated him. They behaved as though directed by a single intelligence, sometimes merely beautiful—a display. Other times, they were definitely malevolent, killing . . . maiming.

At the day's end, Tam handed him a torn piece of computer printout.

''Here's a map for your appointments tomorrow and the schedule. See you at early.''

She left him to find his own way back to the Commissary and his quarters. Nothing unusual about that. Shiptrained people seldom had trouble with enclosed passages.

When he sealed the hatch of his room behind him, only then did he allow himself to accept the accumulated aching fatigue. Was this an accurate forecast of Medean routine? Could her pace be normal here? Could he perform under such pressures? Where was the ''life and death'' focus of her project? *Of Root's project,* he corrected himself. When was he going to meet this Tom Root whose name he had only heard today? Why hadn't Ship given him at least profiles on his workmates? Something here went far deeper than the apparent physical threats which Medea sent against the intruders.

Nikki stowed his bag in a locker, examined the bed. There was no enfolding net, no crashbag. The bed was flat. He pressed it with one hand. Resilient. He stripped, doused the light and climbed into the bed. Rough blankets. Medean fabric? So many questions . . . his first night in a real bed and sleep swept over him as soon as he closed his eyes.

There was a loud thump, cold . . . pain.

It took several heartbeats for Nikki to realize that he had fallen out of the bed. Still half asleep, he was as much amused as surprised. He rubbed at a bruised elbow and tried to remember the dream he'd been having. As rush-rush as everything had been since he'd landed on Medea, he felt that the whole day had been a dream and he was only now awakening. Images from the dream fled through his mind:

He and Tam far above the settlement, somewhere so high that all of Medea dropped sharply away from their feet. They hung there holding each other suspended by . . . what?

Then the fall.

Nikki found the light control, sat on the edge of the bed and measured the drop. It was the height of two hands from the top of the bed to the floor. He touched the floor with fingertips, then increased the light. The floor was hard, sturdy. It was made of long strips of intricately stained material patterned like the tidelands of a wide sea. He'd never seen a sea except in holograms . . . repros.

And in the dream.

Then, as each hair on the back of his neck and scalp prickled and raised, the patterns, the stains, the strips disappeared.

Once more, he awoke on the floor, rubbed his elbow and sat on the edge of the bed. The bed felt more *immediate*, its covers more resistant to his pressing palms. He knew that he'd better be careful. Sometimes it was difficult to tell one reality from another, but Medea was playing tricks on him.

In the morning, he used Tam's map to locate the small commissary used by floater personnel and found her there seated at a corner table, alone. Only one other table was occupied—three older men in gray singlesuits. Eyes turned toward him with curiosity at the new face. Tam already was eating her early. He called it ''breakfast'' and she turned to him, startled.

''Why'd you say that?''

He scanned her, saw only curiosity and mild amusement.

''It surprises you?'' He sat across from her and signaled the autocook for service.

''Perhaps it shouldn't.'' She sipped her juice. ''Language is your life. But that's such an *old* word. We were calling it 'early' three generations and two planets ago.''

''Four generations and three planets ago we were sipping *juice* at *breakfast* whether breakfast was eaten early in the wakeday or late.''

''But I haven't heard that . . .''

''Some words have more inherent wisdom than others. Juice . . .'' He pointed to the glass in her hand. ''. . . is, after all, a fluid naturally contained in plant or animal tissue.''

The autocook took this moment to disgorge his food onto the table. He began eating and, presently, took up his own glass, tasted it. Acid . . . faint sweetness.

''This concoction we're drinking is damned near anything but what we call it.''

She examined her glass against the light.

"But what if it's a pretty word? What if . . ."

"What if we stop playing with words to avoid more important things? Have you discovered what went wrong with that simulator?"

"They've torn it down completely and can't find anything wrong with it. Nothing."

She put her glass down too hard, was surprised to find her hand trembling. *Why does his question anger me?*

Nikki drew in a deep breath. It was what he had expected.

She was accusing now. "But there *was* something wrong and you knew it. How?"

The answer came to him as though he had worked out the details during the night. *I knew because she knew.* And she had concealed this knowledge even from herself. The knowledge was there just the same.

When a thing was true and beautiful he recognized it. The false and ugly betrayed themselves to him with the same clarity. This was a thing about himself which he'd never before put into quite this framework. He found it a heavy burden, as though peering through flesh to entrails.

She pressed him. "How?"

"It's what I was trained to do. I have this . . ."

The commissary speakers blared: "Tam! Nikki! Fly time!"

She was halfway to the exit hatch before he left his seat. Something about Medea conditioned the older colonists to a quickness that jarred against his comforting, steady Shipstyle pace. Nikki caught up with her in the hallway and they jogged side-by-side through the warren passages.

"*Fly time.*"

It came to Nikki that he was headed toward his first flight out into Medea's unpredictable wildness. One day of training—vague training where many of his questions were left unanswered or diverted. The message of Medea was clear to him: Anything he learned here he had to learn on his own, trust his own senses. The realization elated him. That was what a poet did: he learned quickly to stop asking verbal nonsense and to begin detailed observations of everything and everyone around him.

Tam pulled up outside a hatch marked READY ROOM. Her breathing was no more labored than Nikki's. She was glad to note that Nikki's youth gave him no physical edge on her. But his ability to see things which she could not, this filled her with disquiet. She feared it.

"That voice on the speaker was Tom Root," she said. "You'll meet him in a minute."

Nikki remained silent, watchful. His silence upset her.

"Root has extraordinary skill in the air and equal skill in the lab," she said.

"You're defending him as though I were attacking," Nikki said. "Why?"

She blinked, then: "Root's an accomplished cell surgeon, biochemist and meteorologist. I don't have to defend him. I'm just warning you. He doesn't say much but when he talks, listen.''

She cracked the seal to the Ready Room and Nikki breathed a deep lungful of unprocessed Medean air. It was somehow different from the sample he'd inhaled the day before: a taint of ozone in it and undercurrents of lubricants, but there was no escaping a dominant sweetness, thick and aromatic. His lungs drank deeply. For eighteen years his body had been prepared, conditioned, cajoled to deal with the variant Medean environment. He associated bitterness with hostility and was reassured by that aromatic sweetness.

He followed Tam through the hatch, felt his body tingling on alert. They emerged into a low room with no wall opposite them. The opening led directly out onto the hangar floor, and Nikki's attention went immediately to the display board across the hangar. The board projected a numeral twice the height of a man—a large number ''1'' edged in flame red.

Nikki knew that signal: *Heavy radiation; both suns in flare.*

Tam tugged at his elbow, directed him to the near wall on their right, through an opening into a small locker room. She indicated a locker and he saw his name on the door tab. It seemed strange there, alien to him: 'Nikki.'

Her voice prodded him. ''Hurry it up!''

Wondering if he would ever adjust to these demands for speed, he opened the door and read the instructions inside for Code One dress: field pants, shielding slicker with hood, glasses, gloves. The gloves went onto his hands like a second skin. He objected only to the glasses; they filtered out this new world that he'd only just glimpsed. He slipped them into his slicker pocket.

''Hey, poet!''

It was Tam from the next bank of lockers.

''Yeah?''

''Hop it. Less than three minutes to lift.''

''What's the rush?''

''New flares. Bloom started early.''

''But don't we . . .''

He heard a locker slam shut, Tam's quick steps. She wasn't waiting for what she considered idle conversation.

Nikki followed her out into the hangar and finished sealing his slicker just as the ceiling doors spread their metal jaws. Awe absorbed him. There, stained and dented but humming smoothly, their floater hung framed against a wildly banked background of clouds. The colors! Morning light of two suns played reds, purples, silver . . . umber . . . orange.

Sentries at the opening's perimeter scanned the surrounding area for demons and, as Nikki turned to follow Tam's peremptory summons, he caught the flicker of a demon in the dim light. In what seemed part of the same flicker, a sentry raised, fired and lowered his weapon. None of the other sentries paid the slightest attention to this.

What incredible speed these people develop.

Nikki was daunted by this thought as he followed Tam out into the hangar, his attention once more on the floater. It nearly filled the open area and the hangar was at least fifty meters on a side. The reddish-orange bag hugged the ceiling while ground lights played against it. The crew's nest, a web of plasteel and transparent bubbles, scraped the floor, oscillating back and forth like an animal impatient against restraints.

''Root.'' It was Tam's voice.

Nikki turned from looking up at the bag and the suspension lines. Tam had her head into a side hatch to the nest. She pulled back and a man's head appeared in the opening: red hair beginning to go gray, a sense of wiry quickness about the eyes. The face and body were thin. Nikki was struck by the fact that Tam called this man Root to his face, but called him Tom when Root wasn't present.

''We haven't time for introductions or any other nonsense,'' Root said. ''Get in here, both of you.''

It was a Shiptrained voice, almost devoid of emotion.

Nikki followed Tam up into the nest. The metal edges of the hatch were cold even through the gloves. It was dim inside, cramped quarters. Root already was strapped into the seat at the bow bubble. Tam was securing herself in the seat at Root's left. Nikki recognized a console on Root's right identical to the one he'd used the day before. He slipped into the seat, brought the web harness over his shoulders and around his waist.

''Just the three of us this trip,'' Root said.

''That means we have to be both crew *and* observers,'' Tam said. ''Got that?''

Nikki looked over his shoulder, saw that Tam was addressing him. ''Got it.''

She was already busy at her console. Nikki knew he should do the same, check the instruments, renew his acquaintance with this control board he'd seen for the first time only the day before. Instead, he took a moment to study Root as subtly as he could.

Why do I feel apprehensive?

The older man was not as tall as Nikki, but there was a sense of enormous energy about him. He moved with confident sureness, agile but reserved. Root was not a man to reveal all of his resources. And his voice . . . there was a haunted sense about it . . . a feeling of familiarity. *Where have I heard that voice? He reminds me of somebody.*

Forward of Root was the large transparent bubble which gave the whole nest a wide-angle view of terrain. It showed the hangar floor and the display board with its Code One warning. The nest's transparent ceiling curve was dominated by the suspension lines and the bulging undersurface of the floater bag. Directly in front of Root was his instrument hookup and the omniviewscreen which, Nikki belatedly realized, was reflecting his own face for Root to examine.

I don't trust him, Nikki realized. *And he probably knows it.*

It came to Nikki then that Root was a man with secret plans which would not be diverted even if they projected pain or death for others.

To cover the momentary feeling of entrapment which this realization brought, Nikki said the first thing that came into his mind.

"I thought floaters usually ran with a crew of five."

"*Floater*," Root corrected him. "This is it. None of the others is operational. Too unreliable in these winds. The other crews have gone to choppers."

Tam glanced quickly and uneasily in Root's direction, said: "We're a special little crew here."

Nikki turned to his own console, ran the preliminary check which Tam had taught him. Immediately, he noted that all communications to Central and Ship were not responding. He tested *HOOKUP* and got a flashing red *OFF*.

"Why aren't we hooked up to Central?"

"No time for storytelling now," Root said.

The nest lurched, scraped and bumped hard on the hangar floor, then lifted slowly through the open ceiling. The giant bag above them began to angle off to the right as soon as it cleared the dome and the nest barely missed the lip. The colony outbuildings, wildly colored by the early light, were passing beneath them within seconds.

Root's fingers flew over the controls, adjusting sway, changing the bag's surface contour to form a great, sweeping sail.

"This might be a rough ride," Tam said.

She sensed potential conflict between Root and Nikki, was confused by her own ambivalent sympathies. *I'm too old to be a mother hen*, she told herself. *The project's too important for colony survival. Nikki has to make it on his own.*

Root began activating bag jets, metering precious fuel. The nest took on a bouncing, swaying motion which swept broad expanses of cinder crags and ocher ponds across the bow bubble's view.

"Nikki." It was Root.

"Yes."

"If you get sick, throw up in that waste box to your left. Try not to; we're going to need all the help we have and besides, it's distracting."

He's deliberately goading me, Nikki thought. *I'm damned if I'll get sick.* And belatedly: *Maybe that's the reaction he was triggering.*

There was deliberation about Root's behavior, about every voice tone. The man had said: "*You're a nuisance here but try not to be too much of a nuisance.*" Something more ominous lay just under the surface.

Danger . . . constant danger. That was Ship's warning and Nikki told himself never to forget it.

The nest was flying swiftly now at about a thousand meters above undulant sandhills with fans of gnarled scrub in the depressions. The ride was a twisting bounce with a sharp lurch at each end. Hellfire lights rimmed the horizon.

Nikki had experienced rough rides on Ship simulators, but nothing quite like this. And why were they isolated from Ship and from Central? If Root had been doing this for some time, there might be important data that weren't in Ship's banks. Was that possible? Nikki could not ignore a sense of contraShip evil in everything Root did.

Why did Ship let me believe I was fully prepared for Medea?

It was quite obvious that basic survival rules had been changed. Nikki felt a tightness in his chest, a sense of betrayal.

''Nikki, you'll have to be our systems monitor,'' Root said. ''I can fly us through anything and Tam's the best DataMaster we could want. Homeostasis is your department. You understand homeostasis?''

''An organism's tendency to maintain constant internal environment.''

''Good. Without Central we can't automatically monitor some important floater systems.'' Root depressed a key on the far right of his board. ''Your viewer will now readout all the necessary levels and their priority. Tam.''

She took it up as though they'd practiced a training presentation. ''If it's Priority One, like our helium supply, run a check at the indicated intervals. If it's Priority Ten, like the cooler motor in our drinktank, ignore it. If you have questions, ask.''

Hesitantly, Nikki keyed for helium readout against their lift, read it and shot a questioning glance forward at the terrain. They were lifting far faster than the readout indicated. He checked it. Even the best of thermals could not change the basic properties of the floater's helium. He looked up at the billowing bag, back to the readout.

''Root?''

''What is it?'' The man didn't even try to conceal irritation.

''My helium readout rates our Kg/m^3 at two point nine adjusted. What gives? We should be at no more than two point seven-six.''

Instead of answering, Root concentrated on his own controls and viewer. The ride *was* getting rougher. The sharp lurch at the end of every twisting bounce had become a jarring dead-weight drop. Through the transparent ceiling Nikki watched a series of four-meter ripples run the width and length of the bag. The nest banged and slewed, forcing him to bring up the web hood to steady his head. Against these restraints, he peered forward and had his first view of the seacoast with a play of angry colors in the offshore clouds. The floater had reached the upper winds growling in from the sea.

''Root?''

''I heard you. Ignore it.''

It was an unmistakable reprimand.

As though to counter this, Tam said: ''We aren't very lucky today, Nikki. To make the bloom we have to beat this wind and move out over the water.''

The next lurch gathered the nest up against the floater bag and dropped it the full length of the fifteen-meter lines. Both Tam and Root appeared unruffled by the jolt, going right on with their work. Nikki smelled the unmistakable taint of blood in his nose, wiped red with his sleeve.

''Nikki, what're your compressor specs?'' Root asked.

He punched for them, still shaken by the jolt and still wondering why neither Tam nor Root appeared interested in the helium discrepancy. Helium was a floater's life. A leak, a loss of heat control, bad valves—any of a hundred related details—could drop them into deadly sea, desert or mountaintop. To drop out here over land meant certain death. No human could negotiate the shadow zones with their rim of blink-fast predators. Not without support from Central or Ship . . . and Root had isolated them from that support. Why?

''What're those compressor specs?'' Root demanded.

''Safe levels.''

''Don't make me ask twice.''

Nikki accepted this and thought: *We are lifting.*

He decided, at least for the moment, that he would not worry about the helium discrepancy if the others didn't.

Root was making course corrections now. The floater tacked its way into the wind toward the white-edged shoreline.

Whenever he could take his attention from his controls, Nikki peered forward where winds and Medea's oblique tides whipped the sea surface into a thrash of dark water and foam. He saw that they were approaching a large bay. Nikki guessed its width at ten kilometers, then twenty, then realized one of his Shipbound limitations: he could not estimate large distances.

The bay's shoreline appeared high and rocky, difficult for human or demon to negotiate. Between rocks and water stretched a thin buffer of tidelands and then, as the floater drew closer in its angle toward the sea, Nikki saw a thick bank of kelp-like growth just below the surface. It furled and unfurled as far out as he could see. The water at its edges curled green and yellow.

Between system checks and corrections, Nikki divided his attention—now on the kelp-covered sea, now on the helium discrepancy. Still two point nine adjusted. They were operating at about one hundred and ten percent efficiency and he couldn't understand it.

Tam, busy with her own duties, tried to divert Nikki. He must not see through the helium discrepancy—not yet. She spoke quietly, forcing him to concentrate on her voice.

"Whatever generates the bloom's gasbags does so at times of intense solar activity. And we know that somehow they communicate. Root and I feel that they possess an extremely complex, high-order communications system."

"Fully sentient," Root said.

"But their cellular base is vegetable," Nikki said.

"Would you limit intelligence to animals?" Tam asked.

Root was scornful. "This is a new world and if there's one unwritten law of the physical-biological-social universe, it's that anything can happen, given the conditions, and given time, probably will happen."

"They communicate," Tam said. "And they exhibit social behavior which has to be based on communication. You've heard their songs."

Nikki had thought himself the only human to call the sounds of the globes *songs*. He thought back to the Shipside times when he'd listened to the records of those odd sounds—moans, wails, squeaks and grunts. Shipside people played them briefly for amusement, but Nikki had played them often, lulled by . . . what? Rhythms? He'd often wondered about those sounds. Ancient poets had enjoyed the poetry of many languages—even when they did not understand the language or its literal world.

Belatedly, he focused on Tam's words. She knew he'd listened often to the records of the songs. Was that why he'd been chosen?

"Song implies singer," he said. "Why not capture a few for a short time or study older ones that drift close to the base?"

Tam darted a quick glance at him. Was he serious?

"They lift by hydrogen," she said. "How do you capture and confine a firebomb? And even if they don't explode they disintegrate. Capture's out of the question."

"What're we studying?" Root demanded. "We need accurate data. The less contact we have with them, the truer our data. We're like physicists getting down into the world of particle physics to study it."

"How much is our influence and how much original behavior?" Tam asked.

All of this was true, but Nikki could not evade basic misgivings. *Root is trying to misdirect me and Tam is following his lead consciously and unconsciously. Where are they pointing me?*

"You never know when you might be giving your subject subtle clues about what you expect, thereby influencing the outcome," Tam said. "Besides, Root has discovered some startling facts about our vegetable friends down there."

Nikki expected them to expand on this, but Root was forced to concentrate on a course change as the wind shifted, backing around to their stern. First the jets, then the compressors were shut down and they drifted silently before the wind. The view ahead filled with a thick yellow-brown froth breaking across the kelp.

"Thousands of them come off the water at the bloom," Tam said. "But wind and electrical activity allow only a fraction of them to make it inland."

Root was busy venting gas, dropping their floater closer to the sea. It was now less than five hundred meters below them and the high walls of the bay's surrounding cliffs created a pocket of deceptive calm at the sea surface.

"Look! There!" Tam pointed across Root.

"At seven o'clock," Root said.

At first Nikki saw only waves and froth churning over the kelp. Then, slowly, bubbles in the froth began to swell and rise, each in its own violet, green or yellow. Each trailed a long thin strand of itself, much like its tentacles, that appeared to be attached to the kelp. As they rose, the umbilicus stretched thin and broke. The bags floated free and, within seconds, began to play every color of the visible spectrum across their surfaces. Water and air swirled with dancing colors.

Root keyed in the external sensors and, above the high-pitched shriek of wind through the floater's lines, they heard the tentative flutings of the gasbags—clear whistles and odd cadences.

Nikki felt deep within his shoulderblades that those whistles were directed at him. He was both stimulated and upset in ways he could not define. He found it hard to imagine danger in that airborne display of beauty, but knew they could drift down on a colony installation and, unless thwarted, could engulf with flame everything they touched.

"They're a dream," Nikki whispered. "They're all the beauty of a child's best dream."

Neither Root nor Tam responded. All three of them sat enthralled within the nest, rocking in the wind, and watched as thousands of the colorful bags broke the sea's drab surface, swelled and lifted.

Nikki listened to the siren fluting of the bags as they lifted closer and closer, hearing distinct voices waver through the colorful mob. He spoke in a whisper.

"They sound like Ship children when they get up in the morning. They come out of their cubbies and into the dressing room and they jabber themselves awake."

Tam looked at him with a curious softness.

"I would like to see children. I haven't seen a child in almost ninety years."

Root laughed, oddly harsh and when her blue eyes snapped a demanding look at him, he cleared his throat, spoke placatingly.

"Tam, you slept more than fifty of those years in the hyb tanks. Look down there." He stretched his hand across the view, alive now with gasbags tumbling over themselves in the fits and starts of the wind. ''These are children that only we three have seen. We saw them born . . . or hatched.''

''I find no comfort in that,'' she said.

What an odd turn of phrase, Nikki thought. He felt that he'd been an eavesdropper on an exchange with deep and portentous meanings.

Once more, Nikki scanned his console, still curious about the helium but even more curious at this real-time observation of a bloom.

''Tam and I have watched four blooms this year,'' Root said. ''Are you superstitious, Nikki?''

He's goading me again, Nikki thought. When he spoke, he couldn't conceal resentment.

''There are certain things . . . powers we can't measure. And you're right that all things are possible; maybe luck works somewhere in that. But I wouldn't call myself superstitious.''

''Good!'' Root sounded elated. He glanced at Tam who was busy adjusting the external monitors. ''Out of four trips here and a total crew of fourteen, we're the only two survivors.''

Nikki felt as though the bottom had dropped out of his stomach and it was not the lurchings of the floater. He was in genuine physical danger with no Ship to guard him. He was actually exposed to dangerous elements.

Constant danger.

Is this what Ship meant?

Even as he thought this he knew it was too easy to be true. Ship had something else concealed in that warning. Nikki knew this with a sure instinct.

''Listen!''

It was Tam, speaking as she increased the volume on the external sensors. The hesitant, youthful jabber of the rising globes was being replaced by babbling confusion. Quickly, it built into the short, unmistakable sounds of creatures in panic.

As though the sound threw a switch within Nikki, he felt the panic in his own breast.

Evil!

Evil!

Evil!

He didn't know whether he was crying it or just thinking it. But there were screams in his throat and he saw his own gloved fists pound at the console in front of him, then move toward the release catches of his safety harness, fingers clawing.

Through all of this, he was aware of Root watching him with a distant, clinical coldness. Root made no move to help, no comment.

Tam threw a switch on her panel to take over Nikki's controls. *The floater first!* In the same motion, she kicked the safety interlock which secured Nikki in his seat. Nikki thrashed and twisted there like a tortured animal, screaming and crying.

Why wasn't Root doing something to help?

But Root had turned his attention to the forward bubble and its view of the colorful bloom.

"Tam, please observe," he said.

She turned her attention to the view and saw thousands of whirling bags as one boiling mass of visible scream. Color flamed in them. The external sensors relayed a diminishing babble. Only a scattered few of the bags had escaped the destructive dance and she knew from experience that those few would assemble and guide themselves toward the colony with violent intent.

The wind was picking up, tearing at the whirling mass below them. The babble of screams faded and most of the bags emptied, scattering like torn fabric across the surface of the sea. Only the few survivors moved inland.

Nikki had subsided into moaning unconsciousness.

"How very interesting," Root said. "We were correct in asking for this young man."

"His hands are bleeding. Shouldn't we do something?" Tam asked.

"Yes. We should save ourselves by returning to the colony. The young man will be all right until we deliver him to the medics."

"Why is it you're always right?" Tam demanded.

"Careful, Tam. It's my function to be right. And that's why we're alive while the others are dead."

"I still wish we could warn our people." She nodded toward the surviving globes which were now beyond the cliff tops headed toward the distant colony.

"It's only a small attack," Root soothed her. "Security will handle it quite easily."

Nikki awoke to the low sound of murmuring voices. They were sickroom voices filled with well-trained concern. A female voice said: "All right. We'll leave him with you now."

He opened his eyes and saw a beige wall only a few millimeters away. Rough blankets covered him. A bed. He was in a bed. His hands ached and there was a smell of disinfectants.

Slowly, he turned onto his back, saw Tam seated on the edge of the bed reading his biostats from a console attached to the footboard. Nikki recognized his own quarters. The hatch was open to the outer passage and Root stood just inside it, leaning against the wall, a look of intense observation on his face . . . calculating. Root's attention was on Tam.

"I'm glad you're awake," Tam said. There was real concern in her voice.

Root smiled.

Nikki felt a knot of sickness in his stomach. The pain in his hands. He lifted them, saw the transparent swathing of celltape. The curved edges of many cuts smiled up at him through the tape and he remembered once Shipside, a fall at play and a cut leg, his real mother applying celltape.

''You'll learn to like celltape,'' she'd said. ''It makes you heal faster and you can watch yourself mend at the same time.''

Tosa Nikki . . . whatever happened to you?

''Whatever it was, you left it back there at the bloom,'' Tam said. She switched off the biostat console, turned that searching blue gaze on him. ''We have to know what happened.''

Nikki turned his head away toward the wall. Her words called back the panic . . . horror. He remembered pounding the floater console, screams . . . trying to escape from . . . what? From his own body? How was that possible?

''Come, come. We have to know.'' That was Root.

Nikki knew the questions they would ask. Afraid of heights? Afraid of closed spaces? Of people? Death? They would have pulled all of Ship's records on him by now and none of the answers to these questions would be *yes*. Except for death. Something animal responded to that threat and Ship would never explain it.

''It was a rough ride,'' Tam said, ''and your first. Were we too rough on you?''

Nikki recalled a brief instruction record Ship had provided him when he was sixteen:

For five hundred years of earthside history, most humans prejudged poets to be biologically inferior. Remnants of that judgment tend to cling to the human psyche.

Nikki turned his head, stared across the room at Root. ''You don't seriously believe that?''

The man appeared genuinely surprised.

''Maybe not. But remember we were not in *simulated* danger out there. It was real.''

Tam touched his shoulder. ''We lost you when Root told you about the other crews. Could . . .''

''No. I don't know what happened to me; I just know what it *wasn't*. How long have we been back?''

''About five hours,'' Tam said. ''Are you hungry?''

The thought of food made his stomach churn. ''No. No food. Do you have the nest recordings from our trip?''

''Complete tapes,'' Root said. ''Would you like to review them?''

Was that a protesting glare Tam directed at Root?

''Shouldn't we let him recover completely?'' she asked.

''The decision's his,'' Root said.

''Bring them,'' Nikki said.

"We have to take you to them," Root said.

What was that pouncing expectancy in Root's manner?

"Why?" Nikki asked.

"We have to use the floater consoles. All others are linked to the colony and . . . Ship. Only the floater is independent."

"Why?"

"We think Ship has been influencing our project."

"Ship doesn't have to *influence* such things. Ship is God."

Root leaned toward Nikki. "So Ship says. But Ship alone knows what Ship sees for Itself. Like any other being, Ship must choose to see some things and ignore others."

"But Ship's immortal!" Nikki protested. "Without any limits of time, Ship could . . ."

"Ship had you for only eighteen years," Root said. "How long will you have yourself? Five hundred years? A thousand? More than . . ."

Root broke off as Nikki turned away and rubbed his forehead with a celltape-swathed hand.

"Shall we go?" Tam asked. "Or would you rather . . ."

"No. Let's go review those records."

She helped him to stand on wobbly legs and he was surprised to see that he still wore the clothing he'd worn on the floater. They had stripped off only the slicker and the gloves which he'd torn injuring his hands.

None of them spoke on the walk to the hangar, not until they were alone in the floater.

"What if Ship *chose* to hear what you said back there?" Nikki asked, confronting Root.

"I think Ship is bored," Root said. "At the very least, we're entertaining."

The answer filled Nikki with confusion. He stood in the confined nest unable to respond while Root readied the replay. How confident Root appeared! He moved with such sureness, not slinking around like someone who felt the least bit guilty. And Tam—while matter-of-fact, she wasn't cold. She assisted Root as though she understood a definite time-table. That was it! They were on a time-table toward some specific goal. But Tam, while committed, was afraid of something . . . or someone.

She's afraid of Root!

"Is there evidence to support your notion that Ship is influencing your project?" Nikki asked.

"I'm afraid it's not a notion," Tam said.

"But even so, if Ship . . ."

"We're ready for the replay," Root said. He turned and stared at Nikki. It was the stare of a technician toward a test animal.

"Evidence," Nikki insisted.

"We'll show you later," Tam said. "It became clear when we questioned Ship about the purpose of the colony."

"You questioned *Ship's* purpose?"

"Are you horrified, repelled?" Root asked.

"Ship and I used to play a question and answer game," Nikki said. "If I asked a question, Ship always answered truthfully. But Ship didn't always answer in terms I could understand."

"Are you trying to delay the replay?" Tam asked. She indicated the console which Root had readied.

"No, let him go on," Root said. "Was Ship trying to confuse or mislead you?"

"That would've broken a basic rule of the game," Nikki said. "That would've been untruthful. No . . . Ship was teaching me that the answers are always somewhere in the formation of the question."

"How trusting you are," Root said.

"In the question . . . the answer?" Tam asked.

Root leaned forward, staring at Nikki. How did the poet understand his own role in Ship's purpose . . . whatever that purpose? "Do continue."

"Ship might answer me philosophically in conversational terms," Nikki said. "I soon learned how to play the philosophy game. Then It shifted to complex mathematical constructions which I had to learn to discover the answer."

"You were providing your own answers," Tam said.

"In a way. I had to learn how to ask my question in a specific enough way that I could be sure of understanding the answer. And *then* I found that the form of the question carried the language of the answer. Even more: a sufficiently precise question carried the *information* of the answer."

"Why do you now recount this game?" Root asked.

"Because . . . however you asked your questions of Ship, the form of your questions imposed the role that you insisted Ship play. That's the rule of the game."

"The better you get at asking questions, the fewer questions you have to ask," Tam said. She stared at Nikki as though seeing him for the first time. She felt that she was poised on the edge of a new, liberating awareness.

Root was glowering, rubbing at his chin.

Nikki glanced at the ready console, recalling a question he'd asked during the flight to the bloom.

"When I asked about helium today, for example, my question carried the form *and* the language of the answer. Helium adjusted to a Medean sea level referent should read two point seven six Kg over m cubed. I got two point nine. That's the figure for hydrogen."

Root glanced at the sealed hatch on his right, returning his attention to Nikki.

Tam was holding her breath.

"Are you trying to say that we're flying hydrogen?" Root asked.

"Yes. We're flying what the globes fly. Highly flammable in this electrically active atmosphere. In effect, we're a giant flying bomb."

Surprisingly, Root chuckled.

Tam shuddered.

"What amuses you?" Nikki asked. He felt that he had just performed precisely as expected and that this boded no good for him.

"Ship has restricted many of your records," Root said. "Tam assumed that this indicated social or moral problems. Isn't that right, Tam?"

She shook her head: negative.

"Then what did you assume?"

"That Ship wants to keep Nikki a mystery."

"Yes! There's no telling what he knows."

"How did you exchange hydrogen for helium?" Nikki asked. "If your ground crew knew about it, you'd be flying a shovel and rake in one of the cattle compounds."

"But they *do* know," Tam said. "It's the lesser of several dangers." She glanced upward at the hovering bag.

"We're the only floater that those gasbag globes won't attack," Root said. "We have a good ground crew, the best. A good ground crew will take big risks to keep its flying crew alive."

"Who else knows?"

"Nobody."

"Maybe Ship knows," Tam said.

"Ship is nobody," Root said.

Tam put a hand to her mouth.

Nikki had heard a measured calculation in Root's voice and studied the man carefully. *Sacrilege to shock us!* But Root's behavior was always seated in many reasons. What else did he want?

"The mystery today," Root said, "is not just that you panicked, but that the bags panicked. Why? There was only one significant difference about our floater today—you."

"You're telling me that when you fly hydrogen the bloom will come right up to you and it won't attack."

"They tend to ignore us," Tam said.

Nikki looked at the console beside Root. "Let's see what happened today."

Root reached down, flicked a switch. The three screens around them came alive with views of the flight and the sounds were played through the sensor relays.

Nikki divided his attention among the screens, was aware that his companions were watching him. He closed his eyes when the replay came to the part where he had lost control. Terror? He felt nothing but the memory of his panic and even that was not immediate. He could extinguish it at will. But as he listened to his own frantic screams and the strident squeals of the gasglobes, another memory image insinuated itself into his awareness. He saw a clear picture of the floater from outside and he thought of it as a giant member of the bloom. The image projected itself into his awareness without compromise and he felt himself falling, falling away from the giant globe . . . the *floater*.

The image ended. It shut off like the stopping of a tape.

He opened his eyes, signalled for Tam to shut down the console. She reached across Root to depress the switch.

"Well, Nikki?" Root studied him, questioning.

"Why did you start flying hydrogen?"

"Because the bloom flies hydrogen."

"What happened when you flew helium?"

"They'd get within about twenty meters of a floater and they'd scream . . . you had the impression of extreme pain, then they'd expel all their hydrogen and they'd die."

"Scream, you say. The way they did today?"

"Similar."

"How were the other crews killed?"

"Some crashes, some trying to recover gasbag skins before they disintegrated."

"You put people out there in the open?"

"Volunteers."

"Did you get any skins?"

"No."

"What about choppers?"

"The bags won't come anywhere near them."

"Why can't chopper crews recover skins?"

"Choppers just scatter the skins and the increased air movement melts them that much faster."

"Or the demons got to them first," Tam said.

Nikki looked at her. "Have you been on the surface?"

"Twice. Root's been down four times."

"What's it like?"

"Not pretty."

"Why'd you want the skins?"

"We need any clue we can get," she said.

"How about the older bags? Have you been able to get close to them?"

"They move off when we get close and somehow they signal others to run away. When we chase, they'll use up all of their hydrogen trying to escape. Then they just drop and disintegrate."

"Why didn't Ship give me this information?" Nikki asked.

"Ask Ship!" Root said.

There was no mistaking the venom in his voice.

"The old ones warn the young ones of our approach," Tam said. "We've watched it many times."

"But they ignore you when you fly hydrogen?"

''From a distance. The significant thing is that they don't attack.''

''How do they attack?''

''Kamikaze—one or more old ones from above. Static spark and they explode themselves against the floater bag.''

Root pushed a palm downward sharply: *Crash!*

''What happens to gasglobe skins when they fall on water?''

''They melt rather quickly into a sludge which disappears with the first rain,'' Tam said.

''But on land demons eat the skins?''

''Ravenously,'' Tam said. ''Then an odd thing happens.''

''Didn't we come here to find out why Nikki went into panic?'' Root asked. It was obvious he wanted to divert Tam from this course.

Nikki was not being diverted. ''What's the odd thing?''

She saw Root's displeasure and spoke hesitantly.

''After eating a skin, the creature becomes quite unpredictable. It may lose its fear of higher predators, run in aimless circles, ignore obvious prey.''

''We suspect that the skins are hallucinatory,'' Root said.

''Epiphany,'' Nikki said. ''The visitation of God.''

Root shrugged.

''And the older bags prefer to drift over water except that they'll come inland to attack the colony,'' Nikki mused.

''Or to lift animals from the surface and drop them,'' Tam said.

Nikki was surprised. ''Don't they eat animals?''

''Not that we can see.''

''We've never seen them eat anything,'' Root said.

''Well, Nikki, what happened to you out there over the bloom?'' It was Tam, the DataMaster, performing on cue. She had heard Root's displeasure.

''I'm not sure. I think the bloom's panic was contagious and I caught it.''

''How do we know the bloom didn't catch your panic?'' Root demanded.

''I've told you what I believe. I wouldn't have said it if it were untrue.''

As he spoke, Nikki experienced the swift inner expansion which always accompanied his own poetic revelation. He stared at Tam without seeing her. They'd been playing the question game here! He sensed a subtle perversion in the way they'd played the game, but the form was there, the essential form. It lacked only the right language.

What did he know about the bloom?

Skins dissolved . . . sludge in the water disappeared. The deadly demons of the land ate skins and . . . what? Hallucination? Epiphany? Colors! Globes changed colors as they whistled and babbled. Even in panic they changed colors.

He really saw Tam now: the white hair, the translucent skin—*to change colors and become a Medean.*

"You've been lying to me, both of you," Nikki said.

A swift blush suffused Tam's face.

Root saw this betrayal and scowled. "Is that why you're not telling us what really happened to you out there?"

I deserve that, Nikki thought. He wondered why he felt reluctant to tell them about that externalized scene he'd experienced during the panic. He consulted the image once more. There was a message in it, something basic. The floater was . . . it had to be . . . respected, that was it. Respected. It could not be attacked. But . . . it was deadly . . . dangerous. You were compelled to flee such a . . . thing.

Compelled!

"All you did with the hydrogen was to stop the attacks," Nikki said. "You didn't stop the panic."

"They don't come close any more," Tam said. "The panic starts farther and farther . . ."

"Tam!" Root was openly angry.

"We have to tell him," she said. "It's not right."

"He's still hiding something," Root growled.

"I don't care. We have to be straight with him."

"Tam, you agreed . . ."

"But we no longer have a reason for that agreement!"

"I hope you're satisfied! You've blunted the one instrument we could . . ." Root threw up both hands in exasperation.

Nikki stared from one to the other. Root remained mostly a closed and concealing person, but every tone, every movement from Tam carried its revealing message.

"Did you feel the panic?" Nikki asked her.

"The first two trips when they came closer, but not these last times. Root . . ."

"I've never felt a thing," Root said.

It was the most revealing statement Root had made in Nikki's presence. *The man has absolutely no emotions and no sensitivity. He mimics emotion, presents an image of the emotion he believes is responsive.*

Was Root even angry or was it all a calculated performance?

"Why did you ask if I felt the panic?" Tam asked.

"What's a poet supposed to do? You brought me here because I'm supposed to be more sensitive. You hoped I could see through to the reason for the panic."

"And did you?" Root demanded.

"Change the floater's color," Nikki said. "Eliminate the orange."

"Why?"

"Because that's how they identify us as dangerous."

"I won't ask how you arrived at that," Root said. "I don't believe I have time to examine the form of every question." His words conveyed a calculated sneer, but Nikki ignored it. That was part of Root's game. It was the way he played.

First, you have to learn Root's language, Nikki thought. And once more he wondered where he'd heard the man's voice before. It was such an elusive thing. *Why can't I remember?*

''We're scheduled to fly at dawn,'' Tam said. She looked at Root. ''Do you mean you're going to change the floater's color?''

''Of course! Nikki's right. That's why we brought him.''

She glanced at a chronometer on the console at her elbow. ''But dawn . . .''

''The ground crew will work all night,'' Root said. ''Help Nikki back to his quarters. He's had a rough day.''

There was no feeling of concern in Root's words, only a dismissal. *Nikki has served his purpose and now he's a nusiance.*

Tam felt this, too. The first thing she said after they entered Nikki's quarters was: ''Don't be offended by Tom. The only thing that matters to him is the project.''

He's Tom again, Nikki thought. *But never to his face.*

He sat on the bed, leaned back and closed his eyes. How good the bed felt. A sharp *click* caught his attention and he opened his eyes to see Tam pulling a cushioned foldout chair from its concealing panel in the wall. She sat down facing him, their knees almost touching.

''Dawn's not very far away,'' he said.

She shook her head as though his words were insects distracting her.

''Let me see your hands.''

He held out his hands and she examined the skin through the celltape. ''The healing's far enough along. This tape should come off.''

He nodded.

Gently, she removed the tape. How soft her movements were, how careful and considerate. He watched the intensity of her attention.

''Your mother,'' she said, speaking without looking up from her work. ''I pulled her records while you were unconscious.''

Why do I feel a chill? he wondered.

She glanced at him, returned her attention to the tape. A faint smell of healing unguents came from his hands.

''Why was your mother your teacher when you were very young?''

''She asked Ship and Ship consented.''

''What did she teach you?''

''Many things . . . how to clear my mind. The mind doesn't work well when it's cluttered up and churning. It jams . . . it's devoured by questions and distractions.''

She put the last of the celltape in a disposal chute, but continued to hold his hands.

''How do you clear your mind?''

"I throw things out of it one by one, then concentrate on the last thing, then throw that out, too, and focus on the no-thing that's left. Then I don't think things out, I just know them."

"You mean to say that after all your questions and the emphasis on our data, our *information*, after all that, what you really operate on is intuition?"

He smiled at her obvious surprise. How warm her hands were, how true and loving.

"Not exactly. I just give the unconscious part of me a role in most decisions. Facts, records, books—they're all obvious learning."

"But there's a lot of subtler data coming in."

"We're bombarded with it all the time and we ignore it for the most part, filter it out."

"As Tom says: the sentient being chooses what it will see."

"Root said that, not Tom," Nikki said.

"What?" She dropped his hands as though he'd hurt her.

"He said it on the floater. That's when he's Root. You never call him Tom there."

She put a hand to her cheek. The skin remained pale and clear, the blood undertone unchanged.

"I do, don't I. I wonder why I do that?"

"Because you keep him in two compartments—conscious and unconscious."

She stared into his eyes. "You do that so easily. That's what your mother taught you, isn't it?"

"Ship and my mother."

"Can anybody do it?"

"Most can. Very few ever do."

"Will you teach me?"

"It can't be taught, only learned."

"But your mother . . ."

"She talked of it often and her stories were wonderful. She gave me thinking exercises to entertain myself and these were similar to the game I played with Ship."

"You asked questions and she answered."

"Usually she gave me the question. If I brought a question she might not answer. When she answered, it could be *yes* or *no* or *silence*."

She stared at him.

"Silence was an answer?"

"Sometimes. Other times she might answer with a question. If she made a statement that, too, could be no answer."

She leaned back in the chair to absorb this, her head against the cushioning, eyes closed, relaxed.

Nikki didn't move or change his breathing rhythm.

Tam found herself listening to the slow and regular sigh of Nikki's breath. She relaxed her muscles one by one, felt the tension wash out of her stomach and neck and legs. Her breathing fitted itself to Nikki's rhythm and she felt everything go: her body, then her memories one by one, then her thought of self stood apart and drifted down a long corridor to a warm glow with a red wash at the end that was the color of Argo low on the horizon.

''I see,'' she whispered and all thought of self disappeared.

''Tam. Tam?''

She awoke to his voice gentle but insistent, the light pressure of his hand on her shoulder.

''I didn't want to wake you but if we're getting out to the bloom at dawn . . .''

She stretched and noticed that he was admiring her as a woman for the first time. He found her beautiful. She prolonged her stretching.

He saw this and grinned. ''Yes, you're beautiful.''

Immediately, she sat up straight, reached for the callbox at the head of his bed and punched in the hangar code. It rang several times before an impatient female voice answered.

''Yes!''

''Is Root there? This is Tam Kupule.''

''We're pretty busy here.''

''Put him on. It's important.''

''I'll see if he'll come.''

There was a long wait then Root's cold voice. ''What is it, Tam?''

''Have you chosen a color yet?''

''We're about to make it purple.''

''Add some red to that. Make it Argo red.''

''Why? To appeal to the gasbags' esthetic sensibilities?''

''Argo red,'' she insisted. ''And we come in from the Argo side.''

''Where are you?''

''What difference does that make?''

Root's laughter was not companionable. ''Tell Nikki I agree. Argo red it is.''

She slapped the disconnect switch, blushing.

''He's slipping,'' Nikki said. ''He didn't ask you if we're running a research team or a school of design?''

''He thinks the color is your idea.''

''Does that bother you? I'll call him back and . . .''

''No!'' She put a hand on his knee, jerked it back as though his knee had burned her. ''Let it be.''

''That's it,'' Nikki said. ''You have to let it be, then you can tell what it is, what it's doing.'' He leaned forward, cupped her face in his hands and kissed her.

When he released her, she said: ''We mustn't . . .''

''Why, because you're older?''

"Of course not. Sometimes you're older than Root."

"Nobody's older than Root."

The words had come from him spontaneously and their sense of truth shocked him. *Nobody's older than Root.* Who was this man with the familiar voice?

"It's not that there's anybody else," Tam said. "I have no companion. For a time I hoped that Root . . ." She broke off. "I mean *Tom*, of course, but Tom doesn't exist except in those hopes which I . . . I rejected."

He nodded.

"How is it you make people be this truthful?" she asked.

Nikki shrugged. If there was an answer she already had it.

Silence as an answer, she thought.

She wanted to get up but knew that anything she did would only increase the sexual tension between them.

A knock on the hatch startled both of them.

Nikki called out much too loudly: "Open."

It was a young male ground crewman, dark-haired, grinning. He tossed in an open shipcloth bag crammed with tapes and Nikki noted a splash of Argo red on the man's left sleeve.

"Root sent those. Bloom recordings. He said try to find some interesting rhythms in them."

The hatch was closed before either could respond.

Tam stood up abruptly.

"I will not have him laughing at me . . . at us!"

"How do you know that your present response isn't exactly what he wants?"

She sat down as though his words had released latches in her knees. "This is insane."

"Our worrying about what Root wants?"

"That, too. No!" She spoke quickly as he started to reach for her. "I'm going to leave in just a moment. I'll do that in spite of the fact that I want to stay."

"Is that the insanity?"

"I don't think so and neither do you. No . . . what we need is the right time . . ."

"And the right place."

"When a thing's right . . ." She hesitated, then said, "I see. That's why you didn't even question it when I told Root what color to use on the floater."

"When a thing's right," Nikki said.

Once more, Tam stood. "I would like to've known your mother."

Nikki arrived on the hangar floor almost an hour early. Root already was there with a scattered remnant of the ground crew finishing up on the floater. The bag glistened in the upper reaches of the hangar, a dark red ball with flecks of purple in it. The ground crewmen were a ludicrous sight, stained varying shades of Argo red.

The bag of bloom recordings slung over one shoulder, Nikki finished fastening his slicker as he hurried up to Root near the nest's entrance hatch.

"Well, poet, will it work?"

Root gave the appearance of being in exceptionally good humor. It was well done, but Nikki suspected it.

"Perhaps it'll work for the wrong reasons—the way I worked for you."

"Have you worked for me?"

Nikki glanced up at the glistening red bag, shrugged.

"Why did we bring you into the project?" Root asked.

Nikki slipped the bag of recordings to the floor. "Perhaps because you knew I'd listened to every globe tape in Ship's records."

"Ahhhh. And what can you teach us from those peculiar noises?"

"To move with caution. If the globes are sentient, any deaths we've caused could be seen as murders rather than errors of judgment or ignorance."

"You expect the gasbags to mount a massive retaliatory attack?"

"Humankind doesn't have a monopoly on preservation of its species or desires for revenge. The globes already have demonstrated kamikaze behavior."

"Indeed! They're highly explosive in more ways than one. And the key to them has to be in their language."

Nikki produced an emotionless smile right out of Root's own repertoire. "And that, of course, is why you brought me into your project."

Was that a flicker of real rage in Root's eyes? Nikki could not be sure. Before he could explore it, Tam came hurrying up. She flashed a personal, no-barriers smile to Nikki, glanced once at the Argo red of the floater bag before focusing on Root.

"Sorry I'm late. I stopped at meteorology on the way. Since we're coming in from the Argo side. They think we stand a reasonable chance of getting a good float."

"Do they have an optimum course?" Root asked. "I told them to plot it as late as they could."

Tam tapped a pocket of her slicker. "It's a wide sweeping loop from the ocean side, but you know how chancy the winds are out there."

"I'll look at it in a moment," Root said. "Nikki is telling me how he learned caution from the songs of the globes."

Tam sensed the sneering tone in Root's voice, shot a warning look at Nikki. He ignored it.

"We're dealing with what may be the first sentient species of plant we've ever discovered. We don't know their language, their customs, how they reproduce . . ."

"And you'll teach us all that from their songs . . . and you'll teach us before we have a disaster because of our massive ignorance."

"If we're going to share limited territory with another intelligent species, we need a breakthrough before they learn enough about us to take deliberate, concentrated action."

"Stop this!" Tam flared. "We have to work together. Nikki, do you have anything really useful out of those globe recordings?"

"Some technical data viewed from my own specialty."

There was no mistaking Root's quickened interest.

Tam glanced at Root. "Do we have time?"

"The floater has to dry a bit longer. Do give us your technical data, Nikki."

"The shortest whole song is just under six minutes duration and the longest just over thirty. There's a good deal of noise between songs."

"Which means?" Root sounded disappointed.

"It may mean nothing, but it could be chatter—talk, gossip or prose as opposed to the rhythmic, well-structured songs."

"Structure is not necessarily language."

"True. And the duration of each song is probably directly proportional to bag size, the volume of gas. They stop when they've expelled gas to a critical point."

"How can you be sure they sing by expelling gas?" Tam asked.

"I assume it, partly because of the way the songs often stop in mid-note and partly because they can be observed to grow smaller as they sing."

"Reasonable," Root agreed. "But what does all this tell us?"

"When a globe's in a singing mood it moves from song to song with pauses between—*rests* in my terminology—that are the same duration as the pauses between individual notes."

"How does . . ."

"Plenty of concept but little punctuation," Nikki said.

"I see. A high-density communications system."

One of the ground crew was whistling nearby. Nikki hooked a thumb toward the whistler.

"Their songs may be no more than that—self-entertainment, a release from boredom. I hope not, because the chatter between songs is very difficult to break into patterns."

"And you're defining pattern as song," Root said.

"They are meticulously regular, complete sequences of tones repeated intact at various intervals. And they are not rote. They vary from individual to individual and incident to incident."

"Tam has detected similar structures . . ."

"Yes, but each song contains the personality or particular interpretation of the singer. And then there are the color changes."

''A semaphore of some kind,'' Root said. ''We have people working on that in another section. Didn't Ship tell you?''

He sounds so derisive when he says Ship, Nikki thought.

''I saw some studies that didn't seem to be leading us anywhere. At least, not yet.''

The floater beside them began a slow scrape across the hangar floor, back and forth.

''They've topped off our bag,'' Root said. He held a hand toward Tam. ''Let me have that course plot.'' He took a folded paper from her and led them into the suspended nest. As he began strapping himself into the command seat, he glanced back at Nikki, then at Tam. ''Oh, by the way, Tam, Nikki suggests that we brought him into our project for the wrong reasons.''

She finished securing her web harness.

''Did he?''

She looked across at Nikki, who was already secured and running the preliminary checks on his console.

''Yes, that's exactly what he suggested.'' Root spoke as he ran through his own console preliminaries. ''Did you discuss that last night?''

''No.''

''I guess you didn't discuss much of anything. I'm told you went to your own quarters rather early.''

Tam looked up to find Nikki staring at her, supportive, waiting. She knew that if she made the slightest signal to him, he would shift the attack to Root.

Attack!

That was it. *Something good happened to me last night—from Nikki's mother through Nikki to me. I touched something truly powerful.*

Root had sensed this and that was what he had brought under attack. She looked across at Nikki. Their gazes met. Yes, all barriers were down between them.

Why was Root attacking?

Without knowing how they did it (without caring), Tam knew that she and Nikki shared this awareness of Root's behavior. They held the same question in their minds.

''Perhaps it was a futile discussion and you don't care to share it,'' Root said. ''Stand by for lift.''

Nikki spoke directly to Tam.

''My mother once said a strange thing. She said: 'Bring in the sacred fools and we'll fill the well with snow together.' She meant that in times of crisis it's better to do something futile with people of magical spirit than to do nothing at all.''

As he finished speaking, they heard the ceiling doors open. The light around them changed to dull gray and the floater lifted out of the hangar, swinging across the colony in the grip of a hard wind.

Magical spirit, Tam thought. *That's what I touched last night. And I'm no longer afraid of Root.*

And the strangest part of this metamorphosis was that she had never recognized her own fear until after she had lost it.

At his console, Nikki sat in the way his mother had taught: head balanced on the living pole of his spine, his attention focused inward. Part of him carried out the routine of his duties to the floater, but a more important part thought back into words that had passed from his mother's father out of a lore buried in the dark blood of a memory kinship which traced itself through the mother of her father.

"*Only because of ignorance and attachment to the world are you unable to come home.*"

What am I ignorant of? Where am I attached?

By the time the red grin of Argo spread across their horizon, Nikki knew what he had to do. And he knew where he had heard a voice like Root's. Ship spoke like that.

He saw that they were making good speed in their long loop out over the sea. Root was spending fuel, both jet and compressor, with a profligate hand.

A heavy wall of mist swirled up ahead and was just beginning to clear as they approached the bay where Nikki had seen his first bloom. The water surface about three hundred meters below the nest was choppy, but he could see beneath the surface the pulsing expanse of kelp.

Where will the bloom begin?

Root spoke in a quiet, conversational tone.

"What was the wrong reason for bringing you here, Nikki?"

"To sense the panic and signal you when it happened."

"Why should you be here?"

"Because I'm young and comparatively uninfluenced by previous data, by any information other than what you give me or allow me to see."

"How do you know that's not why we brought you?"

"Because your behavior and your questions try to divert me away from anything which springs spontaneously out of my own creative understanding."

"Creative understanding!"

"The globes that bloom here today will be much like me: minimal information to begin with, perhaps some skeletal data to improve their survival chances, but open receptors with little to block their gathering of new facts."

Abruptly, Nikki felt that he had floated free of his seat and the restraining harness. He could see nothing clearly but there was light all around, beautiful light. He was not afraid. The beginning of great joy sat somewhere within him. And out of some dim corner of his consciousness, he heard Root say:

"Here they come!"

From where she sat, Tam could not see Nikki's face unless he turned. And Nikki was her barometer. She felt a deep necessity to see him. One touch to a key and she had linked a corner of her viewscreen to a receptor on Nikki's panel.

She stared at the face on her screen. Nikki's features were trance-like, still—filled with a calm such as she had never seen before. A smile twitched at the corners of her own mouth and the anxious knots which usually cramped her stomach during these flights washed away. It was several heartbeats before she realized they were in the thick of the bloom. The iridescent globes lifted all around, colors flashing. When she activated the external sensors, the sounds of joyful fluting filled the nest.

Root's voice was like cold water dashed in her face.

''There's a storm coming, lightning.''

As though his words had created the scene, she looked out and up toward the bay's landward rim, saw tentative yellow flickers licking back and forth between clouds. A boiling black mass of storm lifted off the land. It rolled closer as she watched and flickering streaks began touching the crags and chimneys and buttes that were Medea's testimony to her violent past.

''What do we do now?'' Root asked. His voice was gloating.

He peered back at Nikki and his lips drew away from his teeth. It was a voracious look, a predator's look, and Tam felt that her breath froze in her throat.

As though her fear alerted him, Nikki turned. His face was beautiful in its stillness.

''We will go down to the water and stay here,'' Nikki said.

''Are you crazy?'' Root demanded. He turned toward his controls. ''We have to try to run for the colony. Tam, restrain him if he tries to interfere.''

Tam heard the false notes in his voice and made her choice. The magical spirit must have its chance. She reached under Root's elbow, grasped the interlock cable from his console and ripped it out. Now, each floater console was locked into its function and Root could not override from his position.

''What're you . . .''

But Nikki already had depressed the DUMP switch on his console. Hydrogen began valving out of the bag above them and the floater started a swiftly controlled descent. The bag above them billowed out like a giant parachute.

''You fools!'' There was real rage in Root's face. He had been thwarted from an unexpected direction. ''Tam! How could . . .''

''She knew instinctively what I know consciously,'' Nikki said. ''You didn't leave us enough fuel to reach the colony. You never intended us to get back.''

The nest was swinging wildly now, caught by the leading edge of the storm. The hiss of hydrogen valving from the bag was a monstrous serpent sound all around.

''You!''

Root struck out at Nikki.

It was an anticipated blow and Nikki met it with an open hand which grasped Root's arm just above the wrist. The arm felt insubstantial, as though it were something less than flesh. There was a writhing, twisting strength in it, though, and Root jerked free. He began unfastening his harness.

In that instant, with less than twenty meters left beneath them to the bay's churning surface, Nikki stiffened. Tam saw his eyes go wide. He said: ''Ohhh . . .''

An explosive *clap* stunned their nest. It came simultaneously with a blast of sulfurous golden light which engulfed the world all around them.

The fall, though short, plunged the floater under the surface in a twisting dive.

Tam gripped the sides of her seat, praying for the chemically activated pontoons to inflate. Dim green light suffused the nest but there were no spurts of water. The hatches were holding.

Root whirled and hit all of the keys on his console.

Nothing.

In a suspended silence, they turned and looked out the bow bubble. Strands of kelp all around. The floater's descent slowed, stopped. It slewed itself upright and they heard the pantoons filling with air beneath them. They began a gentle ascent. Long whips of kelp caged their world and they saw clumps of polyps on the leaves. Each clump sent out slender tendrils and at the end of each tendril small bulbs swelled, drifted to the surface.

Nikki imagined those bulbs breaking free of the mother plant and the sea, drifting away in the magnificent colors of the bloom. The entire system snicked into place within his awareness.

''What do you propose to do now?'' Root asked. There was a charged calm in his voice.

''I'll continue learning their language,'' Nikki said. ''I have the key to it.''

The nest popped to the surface, draping remnants of the exploded bag over the transparent ceiling. It rocked violently in a wind-whipped tidal rip and, through the shreds of the red bag, they glimpsed the bay's distant shore, forbidding black cliffs. The wind had them now and it drove them toward the open sea, but a vagrant current caught the pontoons, whirled them and swept them into a kelp-subdued pocket of calm beneath the headlands.

''The nest can take it,'' Tam said. ''We could float here forever.''

''Forever is a long time,'' Root said. ''I don't think you grasp quite how long.'' He turned toward Nikki. ''What do you intend doing with your little patch of time—besides perfecting your grasp of the gasbags' language?''

''Do you really have the key to it?'' Tam asked.

Root was scornful. ''Don't be a complete fool, Tam. Of course he has it.''

Nikki marvelled at how subdued Root appeared. How calm. But it was only appearance, a pose, a role, a reflected and insubstantial performance. How lonely the man must be within that shell of limited emotions—his rage was real and, perhaps, jealousy. The vengeful awareness of his own crippled being . . . that was real. Everything else was sham.

''How?'' Tam asked, staring at Nikki.

''Planarians,'' Nikki said. ''With a difference.'' He pointed to the currents boiling up through the kelp around them. ''The living, thinking creature is really the kelp. The globes are its eyes, its ears, its arms and voice . . . its contact with the universe through which it learns.''

''Planarians?'' Tam was confused.

Root appeared lost in thought.

''A small earthside flatworm,'' Nikki said. ''I once asked Ship about a poem—'Food of the Gods'—and Ship included planarians in the answer.''

''I've never heard of them. What . . .''

''Although primitive, they can be taught to run mazes,'' Root said. He was looking at Nikki with renewed interest.

How long has he known? Nikki wondered. He said: ''And they can learn without being taught.''

Tam leaned forward to the extent her harness permitted. ''They can learn without . . .''

''They can reproduce whole individuals from just a small part,'' Nikki said. ''Cut out a middle section and your worm will grow a head and tail. The tail will regenerate a new head and middle . . .''

''But you said they learn without . . .''

''Yes. Grind up one that's learned the maze and feed it to a young worm that's never run the maze. The young one learns the maze with remarkable speed. Grind up this young one and feed it to another—the new one learns the maze even faster. Go through the process again and the new worm learns faster yet.''

''The skins dissolve in the water,'' Tam said, looking out at the bay. ''The sludge . . .''

''Food of the immortal kelp,'' Nikki said. ''I wonder how long it's been alive and learning? We must be a fascinating diversion.''

''This is all very interesting,'' Root said. ''But we're still trapped here with no way to contact the colony, no means of returning . . .''

''Since you intended to return alone on foot after a tragic crash and heroic odyssey through the demon lands,'' Nikki said, ''what do you suggest?''

''I intend to wait,'' Root said, grinning.

Ship save us! Tam thought. *He's admitted that Nikki's right. But how . . .*

''Tam survived two ventures out there because you saved her both times, didn't you?'' Nikki asked.

Root shrugged. It was a pointless question and besides the look on Tam's face was answer enough.

Tam stared at Root. ''How?''

''He's not quite human,'' Nikki said. ''I don't know what he is or where he comes from, but he can do things we can't.''

''Ship save us,'' Tam whispered.

''Ship save us,'' Root mimicked. ''You fools haven't the faintest idea of what's happening on Medea, why you're here or what you're doing.''

Nikki smiled, a slow, almost sleepy smile. ''But we're learning. We see to learn, listen to learn, touch and smell to learn and . . .''

''And maybe someday . . .'' Root pointed out at the heaving bay. ''. . . you hope you'll drink a broth made from your 'teachers' and *that's* how you'll learn.''

Root released himself from the seat, stood up and opened a hatch. A cold ozone-washed breeze blew in the opening. It was a clean, invigorating smell with only a touch of damp decay at the edge.

On the breeze came the sound of rhythmic whistles and moans. In the background there was a fluting song, compelling in its siren beauty. Nikki's head nodded to the rhythm. He released his harness and signalled Tam to do the same.

As she stood and peered out through the remnants of their bag, Tam stifled a gasp. A mob of globes—purple, red, green, yellow, blue . . . an iridescent rainbow play of them was drifting down on the nest. At the forefront was a giant globe almost as big as the floater. It played a symphony of red and purple across its shimmering surface.

A light rain of sweet-smelling dust began to sift through the open hatch. Nikki pushed Root aside and clambered out onto the platform created by the inflated pontoon. Tam followed him. Root remained at the open hatch.

The storm had passed out to sea leaving only a warm breeze and the air filled with disintegrating bits of globes which had been destroyed by lightning. Eddies of pastel dust swirled around the nest and a cloudy mist of them obscured the bay's inner shoreline. More globes were rising from the water to replace the lost ones.

Now, the onrushing mob swooped on the nest and circled until their dangling tentacles brushed Nikki's upturned face. He held out his arms to them, his expression rapturous, but Tam cowered away. Root moved to join them on the pontoon but a brushing tentacle left a livid streak across his forehead. He screamed and jerked back into the nest.

Nikki gave no sign that he had heard.

The chittering globes continued to rhapsodize around Nikki, singing to him. Tam pressed herself against the nest, fascinated by the rainbow dance and the fluting songs.

Presently, Nikki began to sing back to the globes in a language Tam could not understand. His voice echoed in her breast until she thought she would choke with longing for the beauty of it. A heightened state of excitement filled her. The gentle rock of the nest on the water, the balmy wind, the rhythmic lick of waves against the pontoon—everything blended with the dance and song of the globes.

The circling mob opened a space around Nikki then and he leaped to the top of the nest where he began to dance while he sang: strange paddling motions, sweeping gestures with both hands, gentle interlacings of his palms . . .

From within the nest, Root demanded: "What's he doing up there?"

"He's dancing."

The globes moved closer, cradling their tentacles around Nikki while he danced. The play of colors was dazzling. Gently, the movement slowed, the colors shifted to a universal brilliant silver with soft veins of red.

Nikki brought his hands to his sides, bowed his head, shuddered and stood still.

Tam looked at his feet. They were stained with Argo red from the remnants of the floater bag on the nest's roof. Bits of color washed from the bag trailed down the sides of the nest into the water.

Nikki's voice, so matter of fact, shocked her.

"They don't understand why the bag isn't dissolving."

"Why aren't they touching me?"

"Because I told them you were afraid."

"You're talking to them!"

"That's right."

"How do you do it?"

"It's in the no-place, the betweens and in the honesty of the songs."

"Why were you dancing?"

"Talking, more talking. I was talking my ancestors to them: the weavers and gardeners, the samurai, the pottery makers, the canoe people, the commuters and keepers of offices, the warriors around the fires . . ."

"They understood?"

"Oh, yes."

"Why're they keeping Root in the nest?"

"I don't know. That's their idea."

"Do they know what Root is?"

"Yes. Ship made him. He's like a partial God who was made that Ship might understand some things better."

She didn't understand this but put it aside.

"Are you through talking to them?"

"No—they've asked me to talk one more thing to them."

"What?"

"The perfect biological principle."

A raucous laugh erupted within the nest.

"I don't understand," Tam said.

"They wish to exchange their information for ours—the perfect biological principle: replication."

She didn't understand for a moment, then: "You don't mean . . ."

"Come up." He held a hand out to her and a gentle golden stir wafted through the slowly circling globes. "You must help me talk to them. We will talk the making of a baby."

Not here! she thought.

A globe dropped close to her and the first tentacle brushed against her shoulder and neck. It was a caress! She leaned into it.

Tam didn't remember taking off her clothes nor seeing Nikki disrobe, but there remained a memory of the globes helping her to the top of the nest and Nikki reclining there, long-limbed, dark and muscular, as though he lay on a grassy earthside meadow soaking up sun after a swim or a hard day in the fields.

She saw their clothes scattered around the nest's top. A shield of rainbow domes covered the sky.

Slowly, she moved toward him. First, a hand touching hand, then, like the tentacles which brushed them both, they matched touch for touch in the nooks and crannies of their curious bodies. Chittering groans filled the air overhead.

"I want you," Tam whispered. "How can I do this here and say such a thing without feeling self-conscious?"

Nikki kissed her, then: "Where have we put our *selves*?"

He had never been with a woman. Ship urged couplings among adolescents. It helped in the selection of breeding pairs and relieved tensions. But Nikki's creative energies had been focused into the feeling words of his poetry. And Ship had helped in some strange way he had never understood—perhaps something in his food.

Now with tentacles reaching and searching across his body, with the sweetness of the air thick around them, with Tam's silky white skin warm and glowing beside him, he knew there was nothing he'd rather do and no one he'd rather have as a companion in ecstasy. Fingers and tongues joined in the tangle of legs and tentacles, then she was on top of him, moving so very slowly, smiling down at him with tears in her eyes, and Nikki felt that he had been introduced to the most ancient language of humans, a true clear conversation which transcended all words, all dialects, all explanations.

Once more, the globes were a dancing splendor of color and song above them. Tam lay quietly beside Nikki and watched his eyes. How beautiful they were! He traced soft designs on her breasts. She touched his cheek.

"The globes say we have made a baby, we truly have," Nikki said.

"I love you," she whispered. Then, eyes wide: "How do they know?"

"They know. They say the moment of replication is also their greatest joy and they can measure it."

"But we weren't selected as a breeding pair."

"Except by our Medean hosts." He sat up. "We should get dressed. The ultraviolet . . . the globes won't be able to shield us much longer."

Nikki slipped into his clothes. Presently, she followed his example, her gaze searching all around the bay as she moved.

"We're still trapped here, Nikki."

He stood atop the nest. "No. The globes will take us home to the colony. Five or six of the big ones . . ."

She slipped down to the pontoon and peered through the hatch into the nest.

"Nikki!"

"Yes?"

"He's gone. Root's gone. Where'd he go?"

"Maybe he didn't go; maybe he was protean and merely took another shape."

"Stop that! They've taken him, haven't they?"

"I don't know. I didn't see them. Did you?"

She blushed, then: "How will we explain it?"

"We'll let the globes explain it after I've taught their language to others."

Nikki turned, lifted his arms and began to sing, swaying and gesturing toward the shore.

Presently, eight of the largest globes moved down in concert and, as Nikki sang, they shifted their color to a uniform Argo red, affixed their tentacles to the nest and lifted it gently from the water.

HUNTER'S MOON

Poul Anderson

> We do not perceive reality, we conceive it. To suppose otherwise is to invite catastrophic surprises. The tragic nature of history stems in large part from this endlessly recurrent mistake.
>
> Oskar Haeml, *Betrachtungen über die menschliche Verlegenheit*

*** Both suns were now down. The western mountains had become a wave of blackness, unstirring, as though the cold of Beyond had touched and frozen it even as it crested, a first sea barrier on the flightway to the Promise; but heaven stood purple above, bearing the earliest stars and two small moons, ocher edged with silvery crescents, like the Promise itself. Eastward, the sky remained blue. There, just over the ocean, Ruii was almost fully lighted. Its bands turned luminous across Its crimson glow. Beneath the glade that It cast, the waters shivered, wind made visible.

A'i'ach felt the wind too, cool and murmurous. Each finest hair on his body responded. He needed but little thrust to hold his course, enough effort to give him a sense of his own strength and of being at one, in travel and destination, with his Swarm. Their globes surrounded him, palely iridescent, well-nigh hiding from him the ground over which they passed; he was among the highest up. Their life-scents overwhelmed all else which the air bore, sweet, heady, and they were singing together, hundreds of voices in chorus, so that their spirits might mingle and become Spirit, a foretaste of what awaited them in the far west. Tonight, when P'a crossed the face of Ruii, there would return the Shining Time. Already they rejoiced in the raptures ahead.

A'i'ach alone did not sing, nor did he lose more than a part of himself in dreams of feast and love. He was too aware of what he carried. The thing that the human had fastened to him weighed very little, but what it was putting into his soul was heavy and harsh. The whole Swarm knew about the danger of attack, of course, and many clutched weapons—stones to drop or sharp-pointed branches shed by ü trees—in the tendrils that streamed under their globes. A'i'ach had a steel knife, his price for letting the human burden him. Yet it was not in the nature of the People to dread what might sink down upon them out of the future. A'i'ach was strangely changed by that which went on inside him.

The knowledge had come, he knew not how, slowly enough that he was not astonished by it. Instead, a grimness had meanwhile congealed. Somewhere in those hills and forests, a Beast ran that bore the same thing he did, that was also in ghostly Swarm-touch with a human. He could not guess what this might portend, save trouble of some kind for the People. He might well be unwise to ask. Therefore he had come to a resolve he realized was alien to his race: he would end the menace.

Since his eyes were set low on his body, he could not see the object secured on top, nor the radiance beaming upward from it. His companions could, though, and he had gotten a demonstration before he agreed to carry it. The beam was faint, faint, visible only at night and then only against a dark background. He would look for a shimmer among shadows on the land. Sooner or later, he would come upon it. The chance was not bad now at this, the Shining Time, when the Beasts would seek to kill People they knew would be gathered in vast numbers to revel.

A'i'ach had wanted the knife as a curiosity of possible usefulness. He meant to keep it in the boughs of a tree; when the mood struck him, he would experiment with it. A Person did once in a while employ a chance-found object, such as a sharp pebble, for some fleeting purpose, such as scooping open a crestflower pod to release its delicious seedlets upon the air. Perhaps with a knife he could shape wood into tools and have a stock of them always ready.

Given his new insight, A'i'ach saw what the blade was truly for. He could smite from above till a Beast was dead—no, *the* Beast.

A'i'ach was hunting. ***

Several hours before sundown, Hugh Brocket and his wife, Jannika Rezek, had been preparing for their night's work when Chrisoula Gryparis arrived, much overdue. A storm had first grounded aircraft at Enrique and then, perversely moving west, forced her into a long detour on her way to Hansonia. She didn't even see the Ring Ocean until she had traversed a good thousand kilometers of mainland, whereafter she must bend southward an equal distance to reach the big island.

''How lonely Port Kato looks from the air,'' she remarked. Though accented, her English—the agreed-upon common language at this particular station—was fluent: one reason she had come here to investigate the possibility of taking a post.

''Because it is,'' Jannika answered in her different accent. ''A dozen scientists, twice as many juniors, and a few support personnel. That makes you extra welcome.''

"What, do you feel isolated?" Chrisoula wondered. "You can call to anywhere on Nearside that there is a holocom, can you not?"

"Yeah, or flit to a town on business or vacation or whatever," Hugh said. "But no matter how stereo an image is and sounds, it's only an image. You can't go out with it for a drink after your conference is finished, can you? As for an actual visit, well, you're soon back here among the same old faces. Outposts get pretty ingrown socially. You'll find out, if you sign on." In haste: "Not that I'm trying to discourage you. Jan's right, we'd be more than happy to have somebody fresh join us."

His own accent was due to history. English was his mother tongue, but he was third-generation Medean, which meant that his grandparents had left North America so long ago that speech back there had changed like everything else. To be sure, Chrisoula wasn't exactly up-to-date, when a laser beam took almost fifty years to go from Sol to Colchis and the ship in which she had fared, unconscious and unaging, was considerably slower . . .

"Yes, from Earth!" Jannika's voice glowed.

Chrisoula winced. "It was not happy on Earth when I left. Maybe things got better afterward. Please, I will talk about that later, but now I would like to look forward."

Hugh patted her shoulder. She was fairly pretty, he thought: not in a class with Jan, which few women were, but still, he'd enjoy it if acquaintance developed bedward. Variety is the spice of wife.

"You really have had bad luck today, haven't you?" he murmured. "Getting delayed till Roberto—uh, Dr. Venosta—went out in the field—and Dr. Feng back to the Center with a batch of samples—" He referred to the chief biologist and the chief chemist. Chrisoula's training was in biochemistry; it was hoped that she, lately off the latest of the rare starcraft, would contribute significantly to an understanding of life on Medea.

She smiled. "Well, then I will know others first, starting with you two nice people."

Jannika shook her head. "I am sorry," she said. "We are busy ourselves, soon to leave, and may not return until sunrise."

"That is—how long? About thirty-six hours? Yes. Is that not long to be away in . . . what do you say? . . . this weird an environment?"

Hugh laughed. "It's the business of a xenologist, which we both are," he said. "Uh, I think I, at least, can spare a little time to show you around and introduce you and make you feel sort of at home." Arriving as she did at a point in the cycle of watches when most folk were still asleep, Chrisoula had been conducted to his and Jannika's quarters. They were early up, to make ready for their expedition.

Jannika gave him a hard glance. She saw a big man who reckoned his age at forty-one Terrestrial years: burly, a trifle awkward in his movements, beginning to show a slight paunch; craggy-featured, sandy-haired, blue-eyed; close-cropped, clean-shaven, but sloppily clad in tunic, trousers, and boots, the style of the miners among whom he had grown up. ''*I* have not time,'' she stated.

Hugh made an expansive gesture. ''Sure, you just continue, dear.'' He took Chrisoula under the elbow. ''Come on, let's wander.''

Bewildered, she accompanied him out of the cluttered hut. In the compound, she halted and stared about her as if this were her first sight of Medea.

Port Kato was indeed tiny. Not to disturb regional ecology with things like ultraviolet lamps above croplands and effluents off them, it drew its necessities from older and larger settlements on the Nearside mainland. Moreover, while close to the eastern edge of Hansonia, it stood a few kilometers inland, on high ground, as a precaution against Ring Ocean tides which could get monstrous. Thus nature walled and roofed and weighed on the huddle of structures, wherever she looked—

—or listened, smelled, touched, tasted, moved. In slightly lesser gravity than Earth's, she had a bound to her step. The extra oxygen seemed to lend energy likewise though her mucous membranes had not yet quite stopped smarting. Despite a tropical location, the air was balmy and not overly humid, for the island lay close enough to Farside to be cooled. It was full of pungencies, only a few of which she could remotely liken to anything familiar, such as musk or iodine. Foreign too were sounds—rustlings, trills, croakings, mumbles—which the dense atmosphere made loud in her ears.

The station itself had an outlandish aspect. Buildings were made of local materials to local design; even a radiant energy converter resembled nothing at home. Multiple shadows carried peculiar tints; in fact, every color was changed in this ruddy light. The trees that reared above the roofs were of odd shapes, their foliage in hues of orange, yellow, and brown. Small things flitted among them or scuttled along their branches. Occasional glittery drifts in the breeze did not appear to be dust.

The sky was deep-toned. A few clouds were washed with faint pink and gold. The double sun Colchis—Castor C was suddenly too dry a name—was declining westward, both members so dim that she could safely gaze at them for a short while, Phrixus at close to its maximum angular separation from Helle.

Opposite them, Argo dominated heaven, as always on the inward-facing hemisphere of Medea. Here the primary planet hung low; treetops hid part of the great flattened disc. Daylight paled the redness of its heat, which would be lurid after dark. Nonetheless it was a colossus, as broad to the eye as fifteen or sixteen Lunas above Earth. The subtly chromatic bands and spots upon its face, ever-changing, were clouds more huge than continents and hurricane vortices that could have swallowed whole this moon upon which she stood.

Chrisoula shivered. ''It . . . strikes me,'' she whispered, ''more than anywhere around Enrique or—or approaching from space . . . I have come elsewhere in the universe.''

Hugh laid an arm around her waist. Not being a glib man otherwise, he merely said, "Well, this *is* different. That's why Port Kato exists, you know. To study in depth an area that's been isolated a while; they tell me the isthmus between Hansonia and the mainland disappeared fifteen thousand years ago. The local dromids, at least, never heard of humans before we arrived. The ouranids did get rumors, which may have influenced them a little, but surely not much."

"Dromids—ouranids—oh." Being Greek, she caught his meanings at once. "Fuxes and balloons, correct?"

Hugh frowned. "Please. Those are pretty cheap jokes, aren't they? I know you hear them a lot in town, but I think both races deserve more dignified names from us. They are intelligent, remember."

"I am sorry."

He squeezed a trifle. "No harm done, Chris. You're new. With a century needed for question and answer, between here and Earth—"

"Yes. I have wondered if it is really worth the cost, planting colonies beyond the Solar System just to send back scientific knowledge that slowly."

"You've got more recent information about that than I do."

"Well . . . the planetology, biology, chemistry, they were still giving new insights when I left, and this was good for everything from medicine to volcano control." The woman straightened. "Perhaps the next step is in your field, xenology? If we can come to understand a nonhuman mind—no, two, on this world—maybe three, if there really are two quite unlike sorts of ouranid as I have heard theorized—" She drew breath. "Well, then we might have a chance of understanding ourselves." He thought she was genuinely interested, not merely trying to please him, when she went on: "What is it you and your wife do? They mentioned to me in Enrique it is quite special."

"Experimental, anyway." Not to overdo things, he released her. "A complicated story. Wouldn't you rather take the grand tour of our metropolis?"

"Later I can by myself, if you must go back to work. But I am fascinated by what I have heard of your project. Reading the minds of aliens!"

"Hardly that." Seeing his opportunity, he indicated a bench outside a machine shed. "If you really would like to hear, sit down."

As they did, Piet Marais, botanist, emerged from his cabin. To Hugh's relief, he simply greeted them before hurrying off. Certain Hansonian planets did odd things at this time of day. Everyone else was still indoors, the cook and bull cook making breakfast, the rest washing and dressing for their next wakeful period.

"I suppose you are surprised," Hugh commenced. "Electronic neuranalysis techniques were in their infancy on Earth when your ship left. They took a spurt soon afterward, and of course the information reached us before you did. The use there had been on lower animals as well as humans, so it wasn't too hard for us—given a couple of geniuses in the Center—to adapt the equipment for both dromids and ouranids. Both those species have nervous systems too, after all, and the signals are electrical. Actually, it's been more difficult to develop the software, the programs, than the hardware. Jannika and I are working on that, collecting empirical data for the psychologists and semanticians and computer people to use.

''Uh, don't misunderstand, please. To *us*, this is nearly incidental. Mindscan—bad word, but we seem to be stuck with it—mindscan should eventually be a valuable tool in our real job, which is to learn how local natives live, what they think and feel, everything about them. However, at present it's very new, very limited, and very unpredictable.''

Chrisoula tugged her chin. ''Let me tell you what I imagine I know,'' she suggested, ''then you tell me how wrong I am.''

''Sure.''

She grew downright pedantic: ''Synapse patterns can be identified and recorded which correspond to motor impulses, sensory inputs, their processing—and at last, theoretically, to thoughts themselves. But the study is a matter of painfully accumulating data, interpreting them, and correlating the interpretations with verbal responses. Whatever results one gets, they can be stored in a computer program as an n-dimensional map off which readings can be made. More readings can be gotten by interpolation.''

''Whe-ew!'' the man exclaimed. ''Go on.''

''I am right this far? I did not expect to be.''

''Well, naturally, you're trying to sketch in a few words what needs volumes of math and symbolic logic to describe halfway properly. Still, you're doing better than I could myself.''

''I continue. Now recently there are systems which can make correspondences between different maps. They can transform the patterns that constitute thought in one mind into the thought-patterns of another. Also, direct transmission between nervous systems is possible. A pattern can be detected, passed through a computer for translation, and electromagnetically induced in a receiving brain. Does this not amount to telepathy?''

Hugh started to shake his head, but settled for: ''M-m-m, of an extremely crude sort. Even two humans who think in the same language and know each other inside out, even they get only partial information—simple messages, burdened with distortion, low signal-to-noise ratio, and slow transmission. How much worse when you try with a different life-form! The variations in speech alone, not to mention neurological structure, chemistry—''

''Yet you are attempting it, with some success, I hear.''

''Well, we made a certain amount of progress on the mainland with both dromids and ouranids. But believe me, 'certain amount' is a gross overstatement.''

''Next you are trying it on Hansonia, where the cultures must be entirely strange to you. In fact, the species of ouranid— Why? Do you not add needlessly to your difficulties?''

"Yes—that is, we do add countless problems, but it is not needless. You see, most cooperating natives have spent their whole lives around humans. Many of them are professional subjects of study: dromids for material pay, ouranids for psychological satisfaction, amusement, I suppose you could say. They're deracinated; they themselves often don't have any idea why their 'wild' kinfolk do something. We wanted to find out if mindscan can be developed into a tool for learning about more than neurology. For that, we needed beings who're relatively, uh, uncontaminated. Lord knows Nearside is full of virgin areas. But here Port Kato already was, set up for intensive study of a region that's both isolated and sharply defined. Jan and I decided we might as well include mindscan in our research program."

Hugh's glance drifted to the immensity of Argo and lingered. "As far as we're concerned," he said low, "it's incidental—one more way for us to try and find out why the dromids and ouranids here are at war."

"They kill each other elsewhere too, do they not?"

"Yes, in a variety of ways, for a larger variety of reasons, as nearly as we can determine. Let me remark for the record, I myself don't hold with the theory that information on this planet can be acquired by eating its possessor. For one thing, I can show you more areas than not where dromids and ouranids seem to coexist perfectly peacefully." Hugh shrugged. "Nations on Earth never were identical. Why should we expect Medea to be the same everywhere?"

"On Hansonia, however—you say war?"

"Best word I can think of. Oh, neither group has a government to issue a formal declaration. But the fact is that more and more, for the past couple of decades—as long as humans have been observing, if not longer—dromids on this island have been hell-bent to kill ouranids. Wipe them out! The ouranids are pacifistic, but they do defend themselves, sometimes with active measures like ambushes." Hugh grimaced. "I've glimpsed several fights, and examined the results of a lot more. Not pleasant. If we in Port Kato could mediate—bring peace—well, I'd think that alone might justify man's presence on Medea."

While he sought to impress her with his kindliness, he was not hypocritical. A pragmatist, he had nevertheless wondered occasionally if humans had a right to be here. Long-range scientific study was impossible without a self-supporting colony, which in turn implied a minimum population, most of whose members were not scientists. He, for example, was the son of a miner and had spent his boyhood in the outback. True, settlement was not supposed to increase beyond its present level, and most of this huge moon was hostile enough to his breed that further growth did seem unlikely. But—if nothing else, simply by their presence, Earthlings had already done irreversible things to both native races.

"You cannot ask them why they fight?" Chrisoula wondered.

Hugh smiled wryly. "Oh, sure, we can ask. By now we've mastered local languages for everyday purposes. Except, how deep does our understanding go?

"Look, I'm the dromid specialist, she's the ouranid specialist, and we've both worked hard trying to win the friendship of specific individuals. It's worse for me, because dromids won't come into Port Kato as long as ouranids might show up anytime. They admit they'd be duty bound to try and kill the ouranids—and eat them, too, by the way; that's a major symbolic act. The dromids agree this would be a violation of our hospitality. Therefore I have to go meet them in their camps and dens. In spite of this handicap, she doesn't feel she's progressed any further than me. We're equally baffled."

"What do the autochthons *say*?"

"Well, either species admits they used to live together amicably . . . little or no direct contact, but with considerable interest in each other. Then, twenty or thirty years back, more and more dromids started failing to reproduce. Oftener and oftener, castoff segments don't come to term, they die. The leaders have decided the ouranids are at fault and must be exterminated."

"Why?"

"An article of faith. No rationale that I can untangle, though I've guessed at motivations, like the wish for a scapegoat. We've got pathologists hunting for the real cause, but imagine how long that might take. Meanwhile, the attacks and killings go on."

Chrisoula regarded the dusty ground. "Have the ouranids changed in any way? The dromids might then jump to a conclusion of *post hoc, propter hoc*."

"Huh?" When she had explained, Hugh laughed. "I'm not a cultivated type, I'm afraid," he said. "The rock rats and bush rangers I grew up amongst do respect learning—we wouldn't survive on Medea without learning—but they don't claim to have a lot of it themselves. I got interested in xenology because as a kid I acquired a dromid friend and followed her-him through the whole cycle, female to male to post-sexual. It grabbed hold of my imagination—a life that exotic."

His attempt to turn the conversation into personal channels did not succeed. "What have the ouranids done?" she persisted.

"Oh . . . they've acquired a new—no, not a new religion. That implies a special compartment of life, doesn't it? And ouranids don't compartmentalize their lives. Call it a new Way, a new *Tao*. It involves eventually riding an east wind off across the ocean, to die in the Farside cold. Somehow, that's transcendental. Please don't ask me how, or why. Nor can I understand—or Jan—why the dromids consider this is such a terrible thing for the ouranids to do. I have some guesses, but they're only guesses. She jokes that they're born fanatics."

Chrisoula nodded. "Cultural abysses. Suppose a modern materialist with little empathy had a time machine, and went back to the Middle Ages on Earth, and tried to find out what drove a Crusade or Jihad. It would appear senseless to him. Doubtless he would conclude everybody concerned was crazy, and the sole possible way to peace was total victory of one side or the other. Which was not true, we know today."

The man realized that this woman thought a good deal like his wife. She continued: "Could it be that human influences have brought about these changes, perhaps indirectly?"

"It could," he admitted. "Ouranids travel widely, of course, so those on Hansonia may well have picked up, at second or third hand, stories about Paradise which originated with humans. I suppose it'd be natural to think Paradise lies in the direction of sunset. Not that anybody has ever tried to convert a native. But natives have occasionally inquired what our ideas are. And ouranids are compulsive mythmakers, who might seize on any concept. They're ecstatics, too. Even about death."

"While dromids are prone to develop militant new religions overnight, I have heard. On this island, then, a new one happens to have turned against the ouranids, no? Tragic—though not unlike persecutions on Earth, I expect."

"Anyhow, we can't help till we have a lot more knowledge. Jan and I are trying for that. Mostly, we follow the usual procedures, field studies, observations, interviews, et cetera. We're experimenting with mindscan as well. Tonight it gets our most thorough test yet."

Chrisoula sat upright, gripped. "What will you do?"

"We'll draw blank, probably. You're a scientist yourself, you know how rare the real breakthroughs are. We're only slogging along."

When she remained silent, Hugh filled his lungs for talk. "To be exact," he proceeded, "Jan's been cultivating a 'wild' ouranid, I a 'wild' dromid. We've persuaded them to wear miniaturized mindscan transmitters, and have been working with them to develop our own capability. What we can receive and interpret isn't much. Our eyes and ears give us a lot more information. Still, this is special information. Supplementary.

"The actual layout? Oh, our native wears a button-sized unit glued onto the head, if you can talk about the head of an ouranid. A mercury cell gives power. The unit broadcasts a recognition signal on the radio band—microwatts, but ample to lock onto. Data transmission naturally requires plenty of bandwidth, so that's on an ultraviolet beam."

"What?" Chrisoula was startled. "Isn't that dangerous to the dromids? I was taught they, most animals, have to take shelter when a sun flares."

"This is safely weak, also because of energy limitations," Hugh replied. "Obviously, it's limited to line-of-sight and a few kilometers through air. At that, natives of either kind tell us they can spot the fluorescence of gas along the path. Not that they describe it in such terms!

"So Jan and I go out in our separate aircraft. We hover too high to be seen, activate the transmitters by a signal, and 'tune in' on our individual subjects through our amplifiers and computers. As I said, to date we've gotten extremely limited results; it's a mighty poor kind of telepathy. This night we're planning an intensive effort, because an important thing will be happening.''

She didn't inquire immediately what that was, but asked instead: ''Have you ever tried sending to a native, rather than receiving?''

''What? No, nobody has. For one thing, we don't want them to know they're being scanned. That would likely affect their behavior. For another thing, no Medeans have anything like a scientific culture. I doubt they could comprehend the idea.''

''Really? With their high metabolic rate, I should guess they think faster than us.''

''They seem to, though we can't measure that till we've improved mindscan to the point of decoding verbal thought. All we've identified thus far is sensory impressions. Come back in a hundred years and maybe someone can tell you.''

The talk had gotten so academic that Hugh positively welcomed the diversion when an ouranid appeared. He recognized the individual in spite of her being larger than usual, her globe distended with hydrogen to a full four meters of diameter. This made her fur sparse across the skin, taking away its mother-of-pearl sheen. Just the same, she was a handsome sight as she passed the treetops, crosswind and then downward. Prehensile tendrils streaming below in variable configurations, to help pilot a jet-propelled swim through the air, she hardly deserved the name ''flying jellyfish''—though he had seen pictures of Earthside Portuguese men-of-war and thought them beautiful. He could sympathize with Jannika's attraction to this race.

He rose. ''Meet a local character,'' he invited Chrisoula. ''She has a little English. However, don't expect to understand her pronunciation at once. Probably she's come to make a quick swap before she rejoins her group for the big affair tonight.''

The woman got up. ''Swap? Exchange?''

''Yeah. Niallah answers questions, tells legends, sings songs, demonstrates maneuvers, whatever we request. Afterward we have to play human music for her. Schönberg, usually; she dotes on Schönberg.''

Loping along a clifftop, Erakoum spied Sarhouth clearly against Mardudek. The moon was waxing toward solar fullness as it crossed that coal-glow. Its disc was dwarfed by the enormous body behind, was actually smaller to the eye than the spot which also passed in view, and its cold luminance had well-nigh been drowned earlier when it moved over one of the belts which changeably girded Mardudek. They grew bright after dark, those belts; thinkers like Yasari believed they cast back the light of the suns.

For an instant, Erakoum was captured by the image, spheres traveling through unbounded spaces in circles within circles. She hoped to become a thinker herself. But it could not be soon. She still had her second breeding to go through, her second segment to shed and guard, the young that it presently brought forth to help rear; and then she would be male, with begetting of her own to do—before that need faded out likewise and there was time for serenity.

She remembered in a stab of pain how her first birthing had been for naught. The segment staggered about weakly for a short while, until it lay down and died as so many were doing, so many. The Flyers had brought that curse. It had to be them, as the Prophet Illdamen preached. Their new way of faring west when they grew old, never to return, instead of sinking down and rotting back into the soil as Mardudek intended, surely angered the Red Watcher. Upon the People had been laid the task of avenging this sin against the natural order of things. Proof lay in the fact that females who slew and ate a Flyer shortly before mating always shed healthy segments which brought forth live offspring.

Erakoum swore that tonight she was going to be such a female.

She stopped for breath and to search the landscape. These precipices rimmed a fjord whose waters lay more placid than the sea beyond, brilliant under the radiance from the east. A dark patch bespoke a mass of floating weed. Might it be plants of the kind from which the Flyers budded in their abominable infancy? Erakoum could not tell at her distance. Sometimes valiant members of her race had ventured out on logs, trying to reach those beds and destroy them; but they had failed, and often drowned, in treacherous great waves.

Westward rose rugged, wooded hills where darkness laired. Athwart their shadows, sparks danced glittering golden, by the thousands—the millions, across the land. They were firemites. Through more than a hundred days and nights, they had been first eggs, then worms, deep down in forest mould. Now Sarhouth was passing across Mardudek in the exact path that mysteriously summoned them. They crept to the surface, spread wings which they had been growing, and went aloft, agleam, to mate.

Once it had meant no more to the People than a pretty sight. Then the need came into being, to kill Flyers . . . and Flyers gathered in hordes to feed on yonder swarms. Hovering low, careless in their glee, they became more vulnerable to surprise than they commonly were. Erakoum hefted an obsidian-headed javelin. She had five more lashed across her back. A number of the People had spent the day setting out nets and snares, but she considered that impractical; the Flyers were not ordinary winged quarry. Anyhow, she wanted to fling a spear, bring down a victim, sink fangs into its thin flesh, herself!

The night muttered around her. She drank odors of soil, growth, decay, nectar, blood, striving. Warmth from Mardudek streamed through a chill breeze to lave her pelt. Half-glimpsed flitting shapes, half-heard as they rustled the brush, were her fellows. They were not gathered into a single company, they coursed as each saw fit, but they kept more or less within earshot, and whoever first saw or winded a Flyer would signal it with a whistle.

Erakoum was farther separated from her nearest comrades than any of them were. The others feared that the light-beam reaching upward from the little shell on her head would give them away. She deemed it unlikely, as faint as the bluish gleam was. The human called Hugh paid her well in trade goods to wear the talisman whenever he asked and afterward discuss her experiences with him. For her part, she knew a darkling thrill at such times, akin to nothing else in the world, and knowledge came into her, as if through dreams but more real. These gains were worth a slight handicap on an occasional hunt . . . even tonight's hunt.

Moreover— There was something she had not told Hugh, because he had not told her earlier. It was among the things she learned without words from the gleam-shell. A certain Flyer also carried one, which also kept it in eldritch contact with a human.

The big grotesque creatures were frank about being neutral in the strife between People and Flyers. Erakoum did not hold that against them. This was not their home, and they could not be expected to care if it grew desolate. Yet she had shrewdly deduced that they would try to keep in its burrow their equal intimacy with members of both breeds.

If Hugh had been anxious for her to be soul-tied to him this night, doubtless another human wanted the same for a Flyer. It would be a special joy to her to bring that one down. Besides, looking as she fared for a pale ray among firemites and stars might lead her toward a whole pack of enemies. Rested, she began to trot inland.

Erakoum was hunting.

Jannika Rezek was forever homesick for a land where she had never lived.

Her parents had politically offended the government of the Danubian Federation. It informed them they need not enter a reindoctrination hospice if they would volunteer to represent their country in the next shipful of personnel to Medea. That was scarcely a choice. Nevertheless, her father told her afterward that his last thought, as he sank down into suspended animation, was of the irony that when he awakened, none of his judges would be alive and nobody would remember what his opinions had been, let alone care. As a matter of fact, he learned at his goal that there was no longer a Danubian Federation.

The rule remained in force that, except for crewfolk, no person went in the opposite direction. A trip was too expensive for a passenger to be carried who would land on Earth as a useless castaway out of past history. Husband

and wife made the best they could of their exile. Both physicians, they were eagerly received in Armstrong and its agricultural hinterland. By the modest standards of Medea, they prospered, finally winning a rare privilege. The human population had now been legally stabilized. More would overcrowd the limited areas suitable for settlement, as well as wreaking havoc on environments which the colony existed to study. To balance reproductive failures, a few couples per generation were allowed three children. Jannika's folk were among these.

Thus everybody, herself perforce included, reckoned hers a happy childhood. It was a highly civilized one, too. In the molecules of reels kept at the Center was stored most of mankind's total culture. Industry was, at last, sufficiently developed that well-to-do families could have sets which retrieved the data in as full hologrammic and stereophonic detail as desired. Her parents took advantage of this to ease their nostalgia, never thinking what it might do to younger hearts. Jannika grew up among vivid ghosts: old towers in Prague, springtime in the Böhmerwald, Christmas in a village which centuries had touched only lightly, a concert hall where music rolled in glory across a festive-clad audience which outnumbered the dwellers in Armstrong, replications of events which once made Earth tremble, songs, poetry, books, legends, fairy tales. . . . She sometimes wondered if she had gone into xenology because the ouranids were like bright, magical beings in a fairy tale.

Today, when Hugh led Chrisoula outside, she had stood for a moment staring after them. Abruptly the room pressed in as if to choke her. She had done what she could in the way of brightening it with drapes, pictures, keepsakes. At present, however, it was bestrewn with field gear; and she hated disorder. He cared naught.

The question rose afresh: How much did he care at all, any longer? They were in love when they married, yes, of course, but even then she recognized it was in high degree a marriage of convenience. Both were after appointments to an outpost station where they would maximize their chances of doing really significant, original research. Wedded couples were preferred, on the theory that they would be less distracted from their work than singletons. When they had their first babies, they were customarily transferred to a town.

She and Hugh quarreled about that. Social pressure—remarks, hints, embarrassed avoidance of the subject—was mounting on them to reproduce. Within population limits, it was desirable to keep the gene pool as large as possible. She was getting along in age, a bit, for motherhood. He was more than willing. But he took for granted that *she* would maintain the home, hold down the desk job, while *he* continued in the field. . . .

She must not reprove him when he came back from his flirtatious little stroll. She lost her temper too often these days, grew outright shrewish, till he stormed from the hut or else grabbed the whisky and started glugging. He was not a bad man—at the core, he was a good man, she amended hastily—thoughtless in many ways but well-meaning. At her time of life, she couldn't likely do any better.

Although— She felt the heat in her cheeks, made a gesture as if to fend off the memory, and failed. It was two days old.

Having learned from A'i'ach about the Shining Time, she wanted to gather specimens of the glitterbug larvae. Hitherto humans had merely known that the adult insectoids swarmed aloft at intervals of approximately a year. If that was important to the inhabitants of Hansonia, she ought to know more. Observe for herself, enlist the aid of biologists, ecologists, chemists— She asked Piet Marais where to go, and he offered to come along. ''The idea should have occurred to me before,'' he said. ''Living in humus, the worms must influence plant growth.''

Moister soil was required than existed at Port Kato. They went several kilometers to a lake. The walking was easy, for dense foliage overhead inhibited underbrush. Softness muffled footfalls, trees formed high-arched naves, multiple rays of light passed through dusk and fragrances to fleck the ground or glance off small wings, a sound as of lyres rippled from an unseen throat.

''How delightful,'' Piet said after a while.

He was looking at her, not ahead. She became very conscious of his blond handsomeness. And his youth, she reminded herself, he was her junior by well-nigh a decade, though mature, considerate, educated, wholly a man. ''Yes,'' she blurted. ''I wish I could appreciate it as you do.''

''It is not Earth,'' he discerned. She realized that her answer had been less noncommittal than intended.

''I wasn't pitying myself,'' she said fast. ''Please don't think that. I do see beauty here, and fascination, and freedom, oh, yes, we're lucky on Medea.'' Attempting a laugh: ''Why, on Earth, what would I have done for ouranids?''

''You love them, don't you?'' he asked gravely. She nodded. He laid a hand on her bare arm. ''You have a great deal of love in you, Jannika.''

She made a confused effort to see herself through his eyes. Medium-sized, with a figure she knew was stunning; dark hair worn shoulder length, with gray streaks that she wished Hugh would insist were premature; high cheekbones, tilted nose, pointed chin, large brown eyes, ivory complexion. Still, though Piet was a bachelor, someone that attractive needn't be desperate, he could meet girls in town and keep up acquaintance by holocom. He shouldn't be this appreciative of her. She shouldn't respond. True, she'd had other men a few times, before and after she married. But never in Port Kato; too much likelihood of complications, and she'd been furious when Hugh got involved locally. Worse yet, she suspected Piet saw her as more than a possible partner in a frolic. That could break lives apart.

''Oh, look,'' she said, and disengaged from his touch in order to point at a cluster of seed pyramids. Meanwhile her mind came to the rescue. "I quite forgot, I meant to tell you, I got a call today from Professor al-Ghazi. We think we've found what makes the glitterbugs metamorphose and swarm."

"Eh?" He blinked. "I didn't realize anybody was working on that."

"Well, it was a, a notion that occurred to me after my special ouranid started me speculating about them. He, A'i'ach, I mean, he told me the time is not strictly seasonal—that is not necessary here in the tropics—but set by Jason—the moon," she added, because the name that humans had bestowed on the innermost of the larger satellites happened to resemble a word which humans had adopted, given by dromids in the Enrique area to an analogue of the sirocco wind.

"He says the metamorphoses come during particular transits of Jason across Argo," she continued. "Roughly, every four hundredth. To be exact, the figure is every hundred and twenty-seven Medean days, plus or minus a trifle. The natives here are as keenly conscious of heavenly bodies as everywhere else. The ouranids make a festival of the swarming; they find glitterbugs delicious. Well, this gave me an idea, and I called the Center and requested an astronomical computation. It seems I was right."

"Astronomical cues, for a worm underground?" Marais exclaimed.

"Well, you doubtless recall how Jason excites electrical activity in the atmosphere of Argo, like Io with Jupiter—" the Solar System, where Earth has her dwelling! "In this case, there's a beaming effect on one of the radio frequencies that are generated, a kind of natural maser. Therefore those waves only reach Medea when the two moons are on their line of nodes. And that is the exact period my friend was describing. The phase is right, too."

"But can the worms detect so weak a signal?"

"I think it is clear that they do. How, I cannot tell without help from specialists. Remember, though, Phrixus and Helle create little interference. Organisms can be fantastically sensitive. Did you know that it takes less than five photons to activate the visual purple in your eye? I suppose the waves from Argo penetrate the soil to a few centimeters' depth and trigger a chain of biochemical reactions. No doubt it is an evolutionary relic from a time when the orbits of Jason and Medea gave an exact match to the seasons. Perturbation does keep changing the movements of the moons, you know."

He was silent a while before he said: "I do know you are a most extraordinary person, Jannika."

She had regained enough equilibrium to control their talk until they reached the lake. There, for a moment, she felt herself shaken again.

A canebrake screened it from them till they had passed through, to halt on a beach carpeted with moss-like amber-hued turf. Untouched by man in its chalice of forest, the water lay scummy, bubbling, and odorous. The sight of soft colors and the smell of living things were not unpleasant; they were normal to Medea—yet how clear and silver-blue the Neusiedler See gleamed in Danubia— Breath hissed between her teeth.

"What's wrong?" Piet followed her gaze. "The dromids?"

A party of them had arrived to drink, some distance off. Jannika stared as if she had never seen their kind before.

Nearest was a young adult, presumably virgin, since she had six legs. From the slender, long-tailed body rose a two-armed centauroid torso, up to the oddly vulpine head, which would reach to Jannika's chest. Her pelt shimmered blue-black under the suns; Argo was hidden by trees.

Four-legged, a trio of mothers kept watch on the eight cubs they had between them. One set of young showed by their size that their parent would soon ovulate again, be impregnated by a mating, shortly thereafter shed her second segment, and attend it until it gave birth. Another member of this group was at that stage of life, walking on two legs, no longer a functional female but with the male gonads still undeveloped.

No male of breeding age was present. Such a creature was too driven, lustful, impatient, violent, for sociability. There were three post-sexual beings, grizzled but strong, protective, their biped movements fast by human standards though laggard compared to the lightning fluidity of their companions.

All adults were armed with stone-age spears, hatchets, and daggers, plus the carnivore teeth in their jaws.

They were gone almost as soon as Jannika had seen them, not out of fear but because they were Medean animals whose chemistry and living went swifter than hers.

"The dromids," she got out.

Piet regarded her a while before he said gently: "They pursue your dear ouranids. You tell me that will get worse than ever on the night when the glitterbugs rise. But you must not hate them. They are caught in a tragedy."

"Yes, the sterility problem, yes. Why should they drag the ouranids down with them?" She struck fist into palm. "Let's get to work, let's collect our samples and go home, can we, please?"

He was fully understanding.

— She cast the memory out and flung herself back into preparations for the night.

Hugh Brocket and his wife departed a while after sunset. Their flitters jetted off in a whisper, reached an intermediate altitude, and circled for a minute while the riders got bearings and exchanged radioed farewells. Observed from below, catching the last gleam of sunken Colchis on their flanks, they resembled a pair of teardrops.

"Good hunting, Jan."

"Ugh! Don't say that."

"Sorry," he apologized in a stiff tone, and cut out the sender. Sure, it had been tactless of him, but why must she be so goddamn touchy?

Never mind. He'd plenty to do. Erakoum had promised to be on Shipwreck Cliffs about this time, since her gang meant to proceed north along the coast from its camp before turning inland. Thereafter her location would be unpredictable. He must lock onto her transmitter soon. Jannika's craft dwindled in sight, bound on her own quest. Hugh set his inertial pilot and settled back in his safety harness to double-check his instruments. That was mechanical, since he knew quite well everything was in order. Most of his attention roamed free.

The canopy gave a titanic vista. Below, hills lay in dappled masses of shadow, here and there relieved by an argent thread that was a river or by the upheaving of precipices and scarps. The hemisphere-dividing Ring Ocean turned the eastern horizon to quicksilver. Westward in heaven, the double sun had left a Tyrian wake. Overhead reached a velvety dark, becoming more starry with each of his heartbeats. He saw a pair of moons, close enough to show discs lighted from two sides, rusty and white; he recognized more, which were mere bright points to his eyes, by their positions as they went on sentry-go among the constellations. Low above the sea smoldered Argo—no, shone, because its upper clouds were in full daylight, bands of brilliance splashed over sullen red. Jason was close to transit, with angular diameter exceeding twenty minutes of arc, and nevertheless Hugh had trouble finding it amidst that glare.

The shore came in view. He activated the detector and set his craft to hovering. An indicator light flashed green; he had his contact. He sent the vehicle aloft, a full three kilometers. Partly this was because he would be concentrating on encephalic input and wanted plenty of room for piloting error; partly it was to keep beyond sight or hearing of the natives, lest his presence affect their actions. Having taken station, he connected and secured the receiver helmet to his head—it didn't weigh much—and switched it on. Transmitted, amplified, transformed, relayed, reinduced, the events in Erakoum's nervous system merged with the events in his.

By no means did he acquire the dromid's full awareness. Conveyance and translation were far too primitive. He had spent his professional lifetime gaining sufficient fellow-feeling with the species that, after as much patience as both individuals could maintain over a span of years, he could barely begin to interpret the signals he gathered. The speed of native mental processes was less of a help—through repetition and reinforcement—than an added hindrance. As a rough analogy, imagine trying to follow a rapid and nearly inaudible conversation, missing many a word, in a language you do not know well. Actually, none of what Hugh perceived was verbal; it was sight, sound, a complex of senses, including those interior like balance and hunger, including dream-hints of senses that he did not think he possessed.

He saw the land go by, bush, branch, slope, stars and moons above shaggy ridges; he felt its varying contours and textures as feet went pacing; he heard its multitudinous low noises; he smelled richness; the impressions were endless, most of them vague and fleeting, the best of them strong enough to take him out of himself, draw him groundward toward oneness with the creature below.

Clearest, perhaps because his glands were stimulated thereby, was emotion, determination. Erakoum was out to get herself a Flyer.

It was going to be a long night, quite possibly a harrowing one. Hugh expected he'd need a dose or two of sleep surrogate. Humans had never gotten away from the ancient rhythms of Earth. Dromids catnapped; ouranids went—daydreamy? contemplative?

As often before, he wondered briefly what Jan's rapport with her native felt like. They would never be able to describe their sharings to each other.

*** Well into the hills, A'i'ach's Swarm found a grand harvest of starwings. The heights were less densely wooded than the lowlands, which was good, for the bright prey never went far up, and below a forest crown, the People were vulnerable to Beast attack. Here was a fair amount of open ground, turf-begrown and boulder-strewn, scattered through the shadowing timber. A narrow ravine crossed the largest of those glades, a gash abrim with blackness.

Like an endless shower of sparks, the starwings danced, dashed, dodged about, beyond counting, meant for naught save the ecstasy of their mating and of the People who fed upon them. Despite the wariness in him, A'i'ach could resist no more than anyone else. He did refrain from valving out gas in his haste to descend, as many did. That would make ascent slow. Instead, he contracted his globe and sank, letting it re-expand slightly as varying air densities demanded. Nor did he release gas to propel himself. Rhythmically pumping, his siphon worked together with the breezes to zigzag him about at low speed. There was no hurry. The starwings numbered more than the Swarm could eat. Plenty would go free to lay their eggs for the next crop.

Among the motes, A'i'ach inhaled his first swallow of them. The sweet hot flavor sang in his flesh. Thickly gathered around him, bobbing, spinning, rippling and flailing their Corybantic tendrils, filling the sky with music, the People forgot caution. Love began. It was not purposeless, though without water to fall into, the pollinated seeds would not germinate. It united everyone. Life-dust drifted like smoke in the radiance of Ruii; the sight, smell, taste made feverish that joy which the starwing feast awakened. Again and again A'i'ach ejaculated. He went past his skin, he became a cell of a single divine being which was itself a tornado of love. Sometime when he felt age upon him, he would drift westward across the sea, into the cold Beyond. There, yielding up the last warmth of his body, his spirit would take its reward, the Promise that forever and ever it would be what it was now in this brief night. . . .

A howl smote. Shapes bounded from under trees, out into the open. A'i'ach saw a shaft pierce the globe next to his. Blood spurted, gas hissed forth, the shriveling form fell as a dead leaf falls. Tendrils still writhed when a Beast snatched it the last way down and fangs rent it asunder.

In the crowd and chaos, he could not know how many others died. The greatest number were escaping, rising above missile reach. Those who were armed began to drop their stones and ü boughs. It was not likely that any killed a Beast.

A'i'ach had relaxed the muscles in his globe and shot instantly upward. Safe, he might have joined the rest of the Swarm, to wander off in search of a place to renew festival. But rage and grief seethed too high. A far-off part of him wondered at that; the People did not take hard the death of a Person. This thing he wore, that somehow whispered mysteries—

And he carried a knife!

Recklessly spending gas, he swung about, downward. Most of the Beasts had vanished back into the woods. A few remained, devouring. He cruised at a height near the limits of prudence and peered after his chance. Since he could not drop like a rock, he must feint at one individual, then quickly jet at another, stab, rise, and attack again.

A wan beam of light struck toward him. It came from the head of a Beast which emerged from shadow, halted, and glared upward.

His will blazed forth in A'i'ach. Yonder was the monster which had his kind of bond to humans. If he had already gained a knife thereby, what might that being have gotten, what might it get, to wreak worse harm? If nothing else, killing it ought to shock its companions, make them think twice about their murderousness.

A'i'ach moved to battle. About him, the starwings happily danced and mated. ***

Jannika must search for an hour before she made her contact. An ouranid could not undertake to be at an exact spot at a given time. Hers had simply informed her, while she fastened the transmitter on him, that his group was currently in the neighborhood of Mount MacDonald. She flew there and cast about in ever-deepening darkness until her indicator shone green. Having established linkage, she rose to three kilometers and set the autopilot to make slow circles. From time to time, as her subject passed northeast, she moved the center of her path.

Otherwise she was engaged in trying to be her ouranid. It was impossible, of course, but from the effort she was learning what could never have come to her through spoken language. Answers to factual questions she would not have thought to ask. Folkways, beliefs, music, poetry, aerial ballet, which she could not have known for what they were, observing from outside. Lower down in her, dimmer, but more powerful—nothing she could write into a scientific report: a sense of delights, yearnings, wind, shiningness, perfumes, clouds, rain, immense distances, a sense of what it was to be a heaven-dweller. Not complete, no, a few wavery glimpses, hard to remember afterward; yet taking her out of herself into a new world agleam with wonder.

The thrill was redoubled tonight by A'i'ach's excitement. Her impressions of what he was experiencing had never been stronger or sharper. She floated on airstreams, life-scents and song possessed her, she was a drop in an ocean beneath Ruii the mighty, there was no home to hopelessly long for because everywhere was home.

The Swarm came at last upon a cloud of glitterbugs, and Jannika's cosmos went wild.

For a moment, half terrified, she started to switch off her helmet. Reason checked her hand. What was happening was just an extreme of what she had partaken in before. Ouranids seldom took much nourishment at a single time; when they did, it had an intoxicating effect. She had also felt their sexuality; A'i'ach's maleness was too unearthly to disturb her as his dromid's femaleness had disturbed Hugh when she mated and later shed her hindquarters. Tonight the ouranids held high revel.

She surrendered to it, crescendo after crescendo, oh, if she only had a man here, but no, that would be different, would blur the sacred splendor, the Promise, the Promise!

Then the Beasts arrived. Horror erupted. Somewhere a strange voice screamed for the avenging of her shattered bliss.

As she trotted along a bare ridge, Erakoum had thought, with a leap of her pulse, that she spied afar a faint blue ray of light in the air. She could not be certain, through the brilliance cast by Mardudek, but she altered her course in hopes. When she had scrambled a long while among stones and thorns, the glimmer disappeared. It must have been a trick of the night, perhaps moonglow on rising mists. That conclusion did nothing to ease her temper. Everything about the Flyers was unlucky!

Because of this, she was behind the rest of the pack. Her first news of quarry came through their yells. "*Hai-ay, hai-ay, hai-ay!*" echoed around, and she snarled in bafflement. Surely she would arrive too late for a kill. Nonetheless she bounded in that direction. If the Flyers did not get a good wind, she could overtake them and follow along from cover to cover, unseen. Maybe they would not go further than she had strength for, before they chanced on a fresh upwelling of firemites and descended anew. Breath rasped in her gullet, the hillside struck at her feet with unseen rocks, but eagerness flung her on till she reached the place.

It was a glade, brightly lit though crisscrossed by shadows, cut in half by a small ravine. The firemites swirled about against the forest murk, like a glinting dustcloud. Several females crouched on the turf and ripped at the remnants of their prey. The rest had departed, to trail the escaped Flyers as Erakoum planned.

She stopped at the edge of trees to pant, looked up, and froze. The mass of Flyers was slowly and chaotically streaming west, but a few lingered to cast down their pitiful weapons. From the top of one, dim light beamed aloft. She had found what she sought.

"*Ee-hah!*" she screamed, sprang forward, shook her javelin. "Come, evilworker, come and be slain! By your blood shall you give to my next brood the life you reaved from my first!"

There was no surprise, there was fate, when the eerie shape spiraled about and drew nearer. More would be settled this night than which of them was to survive. She, Erakoum, had been seized by a Power, had become an instrument of the Prophet.

Crouched, she cast her spear. The effort surged through her muscles. She saw it fly straight as the damnation it carried—but her foe swerved, it missed him by a fingerbreadth, and then all at once he was coming directly at her.

They never did that! What gleamed in his seaweed grip?

Erakoum grabbed after a new javelin off her back. Each knot in the lashing was supposed to give way at a jerk, but this jammed, she must tug again, and meanwhile the enemy loomed ever more big. She recognized what he held, a human-made knife, sharp as a fresh obsidian blade and more thin and strong. She retreated. Her spear was now loose. No room for a throw. She thrust.

With crazy glee, she saw the head strike. The Flyer rolled aside before it could pierce, but blood and gas together foamed darkly from a slash across his paleness.

He spurted forward, was inside her guard. The knife smote and smote. Erakoum felt the stabs, but not yet the pain. She dropped her shaft, batted her arms, snapped jaws together. Teeth closed in flesh. Through her mouth and down her throat poured a rush of strength.

Abruptly the ground was no more beneath her hind feet. She fell over, clawed with forefeet and hands for a hold, lost it, and toppled. When she hit the side of the ravine, she rolled down across cruel snags. She had an instant's glimpse of sky above, stars and firemites, the Mardudek-lighted Flyer drifting by and bleeding. Then nothingness snatched her to itself. —

Folk at Port Kato asked what brought Jannika Rezek and Hugh Brocket home so early, so shaken. They evaded questions and hastened to their place. The door slammed behind them. A minute later, they blanked their windows.

For a time they stared at each other. The familiar room held no comfort. Illumination meant for human eyes was brass-harsh, air shut away from the forest was lifeless, faint noises from the settlement outside thickened the silence within.

He shook his head finally, blindly, and turned from her. "Erakoum gone," he mumbled. "How'm I ever going to understand that?"

"Are you sure?" she whispered.

"I . . . I felt her mind shut off . . . damn near like a blow to my own skull . . . but you were making such a fuss about your precious ouranid—"

"A'i'ach's *hurt!* His people know nothing of medicine. If you hadn't been raving till I decided I must talk you back with me before you crashed your flitter—"

Jannika broke off, swallowed hard, unclenched her fists, and became able to say: "Well, the harm is done and here we are. Shall we try to reason about it, try to find out what went wrong and how to stop another such horror, or not?"

"Yeah, of course." He went to the pantry. "You want a drink?" he called.

She hesitated. "Wine."

He fetched her a glassful. His right hand clutched a tumbler of straight whisky, which he began on at once. "I felt Erakoum die," he said.

Jannika took a chair. "Yes, and I felt A'i'ach take wounds that may well prove mortal. Sit down, will you?"

He did, heavily, opposite her. She sipped from her glass, he gulped from his. Newcomers to Medea always said wine and distilled spirits there tasted more peculiar than the food. A poet had made that fact the takeoff point for a chilling verse about isolation. When it was sent to Earth as part of the news, the reply came after a century that nobody could imagine what the colonists saw in it.

Hugh hunched his shoulders. "Okay," he growled. "We should compare notes before we start forgetting, and maybe repeat tomorrow when we've had a chance to think." He reached across to their recorder and flicked it on. As he entered an identification phrase, his tone stayed dull.

"That is best for us too," Jannika reminded him. "Work, logical thought, those hold off the nightmares."

"Which this absolutely was— All right!" He regained a little vigor. "Let's try to reconstruct what did happen.

"The ouranids were out after glitterbugs and the dromids were out after ouranids. You and I witnessed an encounter. Naturally, we'd hoped we wouldn't—I suppose you prayed for that, hm?—but we knew there'd be hostilities in a lot of places. What shocked the wits out of us was when our personal natives got into a fight, with us in rapport."

Jannika bit her lip. "Worse than that," she said. "They were seeking it, those two. It was not a random encounter, it was a duel." She raised her eyes. "You never told Erakoum, any dromid, that we were linking with an ouranid too, did you?"

"No, certainly not. Nor did you tell your ouranid about my liaison. We both know better than to throw that kind of variable into a program like this."

"And the rest of the station personnel have vocabularies too limited, in either language. Very well. But I can tell you that A'i'ach knew. I was not aware he did until the fight began. Then it reached the forefront of his mind, it shouted at me, not in words but not to be mistaken about.''

''Yeah, same thing for me with Erakoum, more or less.''

''Let's admit what we don't want to, my dear. We have not simply been receiving from our natives. We have been transmitting. Feedback.''

He lifted a helpless fist. ''What the devil might convey a return message?''

''If nothing else, the radio beam that locks us onto our subjects. Induced modulation. We know from the example of the glitterbug larvae—and no doubt other cases you and I never heard of—how shall we know everything about a whole world?— We know Medean organisms can be extremely radio-sensitive.''

''M-m, yeah, the terrific speed of Medean animals, key molecules more labile than the corresponding compounds in us. . . . Hey, wait! Neither Erakoum nor A'i'ach had more than a smattering of English. Certainly no Czech, which you've told me you usually think in. Besides, look what an effort we had to make before we could tune them in at all, in spite of everything learned on the mainland. They'd no reason to do the same, no idea of scientific method. They surely assumed it was only a whim or a piece of magic or something that made us want them to carry those objects around.''

Jannika shrugged. ''Perhaps when we are in rapport, we think more in their languages than we ourselves realize. And both kinds of Medeans think faster than humans, observe, learn. Anyway, I do not say their contact with us was as good as our contact with them. If nothing else, radio has much less bandwidth. I think probably what they picked up from us was subliminal.''

''I guess you're right,'' Hugh sighed. ''We'll have to sic the electronicians and neurologists onto the problem, but I sure can't think of any better explanation than yours.''

He leaned forward. The energy which now vibrated in his voice turned cold: ''But let's try to see this thing in context, so we can maybe get a hint of what kind of information the natives have been receiving from us. Let's lay out once more why the Hansonian dromids and ouranids are at war. Basically, the dromids are dying off, and blame the ouranids. Could we, Port Kato, be at fault?''

''Why, hardly,'' Jannika said in astonishment. ''You know what precautions we take.''

Hugh smiled without mirth. ''I'm thinking of psychological pollution.''

''What? Impossible! Nowhere else on Medea—''

''Be quiet, will you?'' he shouted. ''I'm trying to bring back to my mind what I got from my friend that your friend killed.''

She half rose, white-faced, sat down again, and waited. The wine glass trembled in her fingers.

"You've always babbled about how kind and gentle and esthetic the ouranids are," he said, at her rather than to her. "You swoon over this beautiful new local faith they've acquired—the windborne flight to Farside, the death in dignity, the Nirvana, I forget what else. To hell with the grubby dromids. Dromids don't do anything but make tools and fires, hunt, care for their young, live in communities, create art and philosophy, same as humans. What's interesting to you in that?

"Well, let me tell you what I've told you before, dromids are believers too. If we could compare, I'd give long odds their faiths are stronger and more meaningful than the ouranids'. They keep trying to make sense of the world. Can't you sympathize the least bit?

"Okay, they have a tremendous respect for the fitness of things. When something goes seriously wrong—when a great crime or sin or shame happens—the whole world hurts. If the wrong isn't set right, everything will go bad. That's what they believe on Hansonia, and I don't know but what they've got hold of a truth.

"The lordly ouranids never paid much attention to the groundling dromids, but that was not symmetrical. The ouranids are as conspicuous as Argo, Colchis, any part of nature. In dromid eyes, they too have their ordained place and cycle.

"All at once the ouranids change. They don't give themselves back to the soil when they die, the way life is supposed to—no, they head west, over the ocean, toward that unknown place where the suns go down every evening. Can't you see how unnatural that might seem? As if a tree should walk or a corpse rise. And not an isolated incident; no, year after year after year.

"Psychosomatic abortion? How can I tell? What I can tell is that the dromids are shocked to the guts by this thing the ouranid are doing. No matter how ridiculous the thing is, it hurts them!"

She sprang to her feet. Her glass hit the floor. "Ridiculous?" she yelled. "That *Tao*, that vision? No, ridiculous, that's what your . . . your fuxes believe—except that it makes them attack innocent beings and, and eat them—I can't wait till those creatures are extinct!"

He had risen likewise. "You don't care about children dying, no, of course not," he answered. "What sense of motherhood have you got, for hell's sake? About like a balloon's. Drift free, scatter seed, forget it, it'll bud and break loose and the Swarm will adopt it, never mind anything except your pleasure."

"Why, you— Are you wishing you could be a mother?" she jeered.

His empty hand swung at her. She barely evaded the blow. Appalled, they stiffened where they stood.

He tried to speak, failed, and drank. After a full minute she said, quite low: "Hugh, our natives were getting messages from us. Not verbal. Unconscious. Through them—" she choked—"were you and I seeking to kill each other?"

He gaped until, in a single clumsy gesture, he set his own glass down and held out his arms to her. "Oh, no, oh, no," he stammered. She came to him.

Presently they went to bed. And then he could do nothing. The medicine cabinet held a remedy for that, but what followed might have happened between a couple of machines. At last she lay quietly crying and he went out to drink some more.

The wind wakened her. She lay for a time listening to it boom around the walls. Sleep drained out of her. She opened her eyes and looked at the clock. Its luminous dial said three hours had passed. She might as well get up. Maybe she could make Hugh feel better.

The main room was still lighted. He was asleep himself, sprawled in an armchair, a bottle beside it. How deep the lines were in his face.

How loud the wind was. Probably a storm front which the weather service had reported at sea had taken a quick, unexpected swing this way. Medean meteorology was not yet an exact science. Poor ouranids, their festival disrupted, they themselves blown about and scattered, even endangered. Normally they could ride out a gale, but a few might be carried to disaster, hit by lightning or dashed against a cliff or hopelessly entangled in a tree. The sick and injured would suffer most.

A'i'ach.

Jannika squeezed her lids together and struggled to recall how badly wounded he was. But everything had been too confused and terrible; Hugh had diverted her attention; before long she had flitted out of transmission range. Besides, A'i'ach himself could hardly have ascertained his own condition at once. It might not be grave. Or it might. He could be dead by now, or dying, or doomed to die if he didn't get help.

She was responsible—perhaps not guilty, by a moralistic definition, but responsible.

Resolution crystallized. If the weather didn't preclude, she would go search for him.

Alone? Yes. Hugh would protest, delay her, perhaps actually restrain her by force. She recorded a few words to him, wondered if they were overly impersonal, decided against composing something more affectionate. Yes, she wanted a reconciliation, and supposed he did, but she would not truckle. She redonned her field garb, added a jacket into whose pockets she stuffed some food bars, and departed.

The wind rushed bleak around her, *whoo-oo-oo*, a torrent she must breast. Clouds scudded low and thick, tinged red where Argo shone between them. The giant planet seemed to fly among ragged veils. Dust whirled in the compound, gritty on her skin. Nobody else was outdoors.

At the hangar, she punched for the latest forecast. It looked bad but not, she thought, frightening. (And if she did crash, was that such an enormous loss, to herself or anyone else?) "I am going back to my study area," she told the mechanic. When he attempted to dissuade her, she pulled rank. She never liked that, but from the Danubian ghosts she had learned how. "No further discussion. Stand by to open the way and give me assistance if required. That is an order."

The little craft shivered and drummed on the ground. Takeoff took skill—with a foul moment when a gust nearly upset her—but once aloft her vehicle flew sturdily. Risen above the cloud deck, she saw it heave like a sea, Argo a mountain rearing out of it, stars and companion moons flickery overhead. Northward bulked a darkness more deep and high, the front. The weather would really stiffen in the next few hours. If she wasn't back soon, she'd better stay put till it cleared.

The flight was quick to the battleground. When the inertial pilot had brought her there, she circled, put on her helmet, activated the system. Her pulse fluttered and her mouth had dried. "A'i'ach," she breathed, "be alive, please be alive."

The green light went on. At least his transmitter existed on the site. He? She must will herself toward rapport.

Weakness, pain, a racket of soughing leaves, tossing boughs— "A'i'ach, hang on, I'm coming down!"

A leap of gladness. Yes, he did perceive her.

Landing would be risky indeed. The aircraft had a vertical capability, excellent radar and sonar, a computer and effectors to handle most of the work. However, the clear space below was not large, it was cleft in twain, and while the surrounding forest was a fair windbreak, there would be vile drafts and eddies. "God, into Your hands I give myself," she said, and wondered as often before how Hugh endured his atheism.

Nevertheless, if she waited she would lose courage. Down!

Her descent was wilder still than she had expected. First the clouds were a maelstrom, then she was through them but into a raving blast, then she saw treetops grab at her. The vehicle rolled, pitched, yawed. Had she been an utter fool? She didn't truly want to leave this life. . . .

She made it, and for minutes sat strengthless. When she stirred, she felt her entire body ache from tension. But A'i'ach's hurt was in her. Called by that need, she unharnessed and went forth.

The noise was immense in the black palisade of trees around her, their branches groaned, their crowns foamed; but down on the ground the air, though restless, was quieter, nearly warm. Unseen Argo reddened the clouds, which cast enough glow that she didn't need her flashlight. She found no trace of the slain ouranids. Well, they had no bones; the dromids must have eaten every scrap. What a ghastly superstition— Where was A'i'ach?

She found him after a search. He lay behind a spiny bush, in which he had woven his tendrils to secure himself. His body was deflated to the minimum, an empty sack; but his eyes gleamed, and he could speak, in the shrill, puffing language of his people, which she had come to know was melodious.

"May joy blow upon you. I never hoped for your advent. Welcome you are. Here it has been lonely." A shudder was in that last word. Ouranids could not long stand being parted from their Swarms. Some xenologists believed that with them consciousness was more collective than individual. Jannika rejected that idea, unless perhaps it applied to the different species found in parts of Nearside. A'i'ach had a soul of his own!

She knelt. "How are you?" She could not render his sounds any better than he could hers, but he had learned to interpret.

"It is not overly ill with me, now that you are nigh. I lost blood and gas, but those wounds have closed. Weak, I settled in a tree until the Beasts left. Meanwhile the wind rose. I thought best not to ride it in my state. Yet I could not stay in the tree, I would have been blown away. So I valved out the rest of my gas and crept to this shelter."

The speech held far more such a bare statement. The denotation was laconic and stoical, the connotations not. A'i'ach would need at least a day to regenerate sufficient hydrogen for ascent—how long depended on how much food he could reach in his crippled condition—unless a carnivore found him first, which was quite likely. Jannika imagined what a flood of suffering, dread, and bravery would have come over her had she been wearing her helmet.

She gathered the flaccid form into her arms. It weighed little. It felt warm and silky. He cooperated as well as he was able. Just the same, part of him dragged on the ground, which must have been painful.

She must be rougher still, hauling on folds of skin, when she brought him inside the aircraft. It had scant room to spare; he was practically bundled into the rear section. Rather than apologizing when he moaned, or saying anything in particular, she sang to him. He didn't know the ancient Terrestrial words, but he liked the tunes and realized what she meant by them.

She had equipped her vehicle for basic medical help to natives, and had given it on past occasions. A'i'ach's injuries were not deep, because most of him was scarcely more than a bag; however, the bag had been torn in several places and, though it was self-sealing, flight would reopen it unless it got reinforcement. Applying local anesthetics and antibiotics—that much had been learned about Medean biochemistry—she stitched the gashes.

"There, you can rest," she said when, cramped, sweat-soaked, and shaky, she was done. "Later I will give you an injection of gas and you can rise immediately if you choose. I think, though, we would both be wisest to wait out the gale."

A human would have groaned: "It is *tight* in here."

"Yes, I know what you mean, but—A'i'ach, let me put my helmet on.'' She pointed. ''That will join our spirits as they were joined before. It may take your mind off your discomfort. And at this short range, given our new knowledge—'' A thrill went through her. ''What may we not find out?''

''Good,'' he agreed. ''We may enjoy unique experiences.'' The concept of discovery for its own sake was foreign to him . . . but his search for pleasures went far beyond hedonism.

Eager despite her weariness, she moved into her seat and reached for the apparatus. The radio receiver, always open to the standard carrier band, chose that moment to buzz.

Argo in the east glowered at the nearing, lightning-shot wall of storm in the north. Below, the clouds already present roiled in reds and darknesses. Wind wailed. Hugh's aircraft lurched and bucked. Despite a heater, chill seeped through the canopy, as if brought by the light of stars and moons.

''Jan, are you there?'' he called. ''Are you all right?''

Her voice was a swordstroke of deliverance. ''Hugh? Is that you, darling?''

''Yes, sure, who the hell else did you expect? I woke up, played your message, and— Are you all right?''

''Quite safe. But I don't dare take off in this weather. And you mustn't try to land, that would be too dangerous by now. You shouldn't stay, either. Darling, *rostomily*, that you came!''

''Judas priest, sweetheart, how could I not? Tell me what's happened.''

She explained. At the end, he nodded a head which still ached a bit from liquor in spite of a nedolor tablet. ''Fine,'' he said. ''You wait for calm air, pump up your friend, and come on home.'' An idea he had been nursing nudged him. ''Uh, I wonder. Do you think he could go down into that gulch and recover Erakoum's unit? Those things are scarce, you know.'' He paused. ''I suppose it'd be too much to ask him to throw a little soil over her.''

Jannika's tone held pity. ''I can do that.''

''No, you can't. I got a clear impression from Erakoum as she was falling, before she cracked her skull apart or whatever she did. Nobody can climb down without a rope secured on top. It'd be impossible to return. Even with a rope, it'd be crazy dangerous. Her companions didn't attempt anything, did they?''

Reluctance: ''I'll ask him. It may be asking a lot. Is the unit functional?''

''Hm, yes, I'd better check on that first. I'll report in a minute or three. Love you.''

He did, he knew, no matter how often she enraged him. The idea that, somewhere in the abysses of his being, he might have wished her death, was not to be borne. He'd have followed her through a heavier tempest than this, merely to deny it.

Well, he could go home with a satisfied conscience and wait for her arrival, after which— What? The uncertainty made a hollowness in him.

His instrument flashed green. Okay, Erakoum's button was transmitting, therefore unharmed and worth salvaging. If only she herself—

He tensed. The breath rattled in his lungs. Did he *know* she was dead?

He lowered the helmet over his temples. His hands shook, giving him trouble in making the connections. He pressed the switch. He willed to perceive—

Pain twisted like white-hot wires, strength ebbed and ebbed, soft waves of nothingness flowed ever more often, but still Erakoum defied. The slit of sky that she could see, from where she lay unable to creep further, was full of wind. . . . She shocked to complete awareness. Again she sensed Hugh's presence.

''Broken bones, feels like. Heavy blood loss. She'll die in a few more hours. Unless you give her first aid, Jan. Then she ought to last till we can fly her to Port Kato for complete attention.''

''Oh, I can do sewing and bandaging and splinting, whatever, yes. And nedolor's an analgesic stimulant for dromids too, isn't it? And simply a drink of water could make the whole difference; she must be dehydrated. But how to reach her?''

''Your ouranid can lift her up, after you've inflated him.''

''You can't be serious! A'i'ach's hurt, convalescent—and Erakoum tried to kill him!''

''That was mutual, right?''

''Well—''

''Jan, I'm not going to abandon her. She's down in a grave, who used to run free, and the touch of me she's getting is more to her than I could have imagined. I'll stay till she's rescued, or else I'll stay till she dies.''

''No, Hugh, you mustn't. The storm.''

''I'm not trying to blackmail you, dearest. In fact, I won't blame your ouranid much if he refuses. But I can't leave Erakoum. I just plain can't.''

''I . . . I have learned something about you. . . . I will try.''

*** A'i'ach had not understood his Jannika. It was not believable that helping a Beast could help bring peace. That creature was what it was, a slaughterer. And yet, yet, once there had been no trouble with the Beasts, once they had been the animals which most interested and entertained the People. He himself remembered songs about their fleetness and their fires. In those lost days they had been called the Flame Dancers.

What made him yield to her plea was unclear in his spirit. She had probably saved his life, at hazard to her own, and this was an overpowering new thought to him. He wanted greatly to maintain his union with her, which enriched his world, and therefore hesitated to deny a request that seemed as urgent as hers. Through the union, she helmeted, he believed he felt what she did when she said, with water running from her eyes, "I want to heal what *I* have done—" and that kind of feeling was transcendent, like the Shining Time, and was what finally decided him.

She assisted him from the thing-which-bore-her and payed out a tube. Through the latter he drank gas, a wind-rush of renewed life. His injuries twinged when his globe expanded, but he could ignore that.

He needed her anchoring weight to get across the ground to the ravine. Fingers and tendrils intertwined, they nevertheless came near being carried away. Had he let himself swell to full size, he could have lifted her. Air harried and hooted, snatched at him, wanted to cast him among thorns—how horrible the ground was!

How much worse to descend below it. He throbbed to an emotion he scarcely recognized. Had she been in rapport, she could have told him that the English word for it was "terror." A human or a dromid who felt it in that degree would have recoiled from the drop. A'i'ach made it a force blowing him onward, because this too raised him out of himself.

At the edge, she threw her arms around him as far as they would go, laid her mouth to his pelt, and said, "Good luck, dear A'i'ach, dear brave A'i'ach, good luck, God keep you." Those were the noises she made in her language. He did not recognize the gesture either.

A cylinder she had given him to hold threw a strong beam of light. He saw the jagged slope tumble downward underneath him, and thought that if he was cast against that, he was done for. Then his spirit would have a fearful journey, with no body to shelter it, before it reached Beyond—if it did, if it was not shredded and scattered first. Quickly, before the churning airs could take full hold of him, he jetted across the brink. He contracted. He sank.

The dread as gloom and walls closed in was like no other carouse in his life. At its core, he felt incandescently aware. Yes, the human had brought him into strange skies.

Through the dankness he caught an odor more sharp. He steered that way. His flash picked out the Beast, sprawled on sharp talus, gasping and glaring. He used jets and siphon to position himself out of reach and said in what English he had, "I haff ch'um say-aff ee-you." ***

— From the depths of her deathplace, Erakoum looked up at the Flyer. She could barely make him out, a big pale moon behind a glare of light. Amazement heaved her out of a drowse. Had her enemy pursued her down here in his ill-wishing?

Good! She would die in battle, not the torment which ripped her. "Come on and fight," she called hoarsely. If she could sink teeth in him, get a last lick of his blood— The memory of that taste was like sweet lightning. During the time afterward which refused to end, she had thought she would be dead already if she had not swallowed those drops.

Their wonder-working had faded out. She stirred, seeking a defensive posture. Agony speared through her, followed by night.

When she roused, the Flyer still waited. Amidst a roaring in her ears, she heard, over and over, "I haff ch'um say-aff ee-you."

Human language? This *was* the being that the humans favored as they did her. It had to be, though the ray from its head was hidden by the ray from its tendrils. *Could Hugh have been bound all the while to both?*

Erakoum strove to form syllables never meant for her mouth and throat. "Ha-watt-tt you ha-wannit? Gho, no bea haiar, gho."

The Flyer made a response. She could no more follow that than he appeared to have followed hers. He must have come down to make sure of her, or simply to mock her while she died. Erakoum scrabbled weakly after a spear. She couldn't throw one, but—

From the unknownness wherein dwelt the soul of Hugh, she suddenly knew: He wants to save you.

Impossible. But . . . but there the Flyer was. Half delirious, Erakoum could yet remember that Flyers were seldom that patient.

What else could befall but death? Nothing. She lay back on the rock shards. Let the Flyer be her doom or be her Mardudek. She had found the courage to surrender.

The shape hovered. Her hair sensed tiny gusts, and she thought dimly that this must be a difficult place for him too. Speech burst and skirled. He was trying to explain something, but she was too hurt and tired to listen. She folded her hands around her muzzle. Would he appreciate that gesture?

Maybe. Hesitant, he neared. She kept motionless. Even when his tendrils brushed her, she kept motionless.

They slipped across her body, got a purchase, tightened. Through the haze of pain, she saw him swelling. He meant to lift her—up to Hugh?

When he did, her knife wounds opened and she shrieked before she swooned.

Her next knowledge was of lying on turf under a hasty, red-lit sky. A human crouched above her, talking to a small box that replied in the voice of Hugh. Behind, the Flyer lay shrunken, clutching a bush. Storm brawled; the first stinging raindrops fell.

In the hidden way of hunters, she knew that she was dying. The human might staunch those cuts and stabs, but could not give back what was lost.

Memory—what she had heard tell, what she had briefly tasted herself—"Blood of the Flyer. It will save me. Blood of the Flyer, if he will give." She was not sure whether she spoke or dreamed it. She sank back into the darkness.

When she surfaced anew, the Flyer was beside her, embracing her against the wind. The human was carefully using a knife on a tendril. The Flyer brought the tendril in between Erakoum's fangs. As the rain's full violence began, she drank.

A double sunrise was always lovely.

Jannika had delayed telling Hugh her news. She wanted to surprise him, preferably after his anxiety about his dromid was past. Well, it was; Erakoum would be hospitalized several days in Port Kato, which ought to be an interesting experience for all concerned, but she would get well. A'i'ach had already rejoined his Swarm.

When Hugh wakened from the sleep of exhaustion which followed his bedside vigil, Jannika proposed a dawn picnic, and was touched at how fast he agreed. They flitted to a place they knew on the sea cliffs, spread out their food, and sat down to watch.

At first Argo, the stars, and a pair of moons were the only lights. Slowly heaven brightened, the ocean shimmered silver beneath blue, Phrixus and Helle wheeled by the great planet. Wild songs went trilling through air drenched with an odor of roanflower, which is like violets.

"I got the word from the Center," she declared while she held his hand. "It's definite. The chemistry was soon unraveled, given the extra clue we had from the reviving effect of blood."

He turned about. "What?"

"Manganese deficiency," she said. "A trace element in Medean biology, but vital, especially to dromids and their reproduction—and evidently to something else in ouranids, since they concentrate it to a high degree. Hansonia turns out to be poorly supplied with it. Ouranids, going west to die, were removing a significant percentage from the ecology. The answer is simple. We need not try to change the ouranid belief. Temporarily, we can have a manganese supplement made up and offer it to the dromids. In the long run, we can mine the ore where it's plentiful and scatter it as a dust across the island. Your friends will live, Hugh."

He was quiet for a time. Then—he could surprise her, this son of an outback miner—he said: "That's terrific. The engineering solution. But the bitterness won't go away overnight. We won't see any quick happy ending. Maybe not you and me, either." He seized her to him. "Damnation, though, let's try!"

THE PROMISE

Kate Wilhelm

Irina Ulene hated the garish hotel that looked as if it had been designed by someone who had glimpsed Rousseau's jungle images once in a distant past. Harsh yellow light, brilliant oranges, red, blues—everything was too vivid, too glaring. The greenery was false, hybridized by someone who believed that banana leaves were six feet wide and bird of paradise plants ten feet tall.

Jolly, the owner of the hotel, joined her at the entrance to the bar and guided her to a table where they ordered drinks. It was said that Jolly was one-third man, two-thirds prosthetics. It did not show. He was dressed in jodhpurs, boots, a pale blue silk shirt; there was even a white scarf tied about his throat.

"Give any thought to the job I offered you?" he asked.

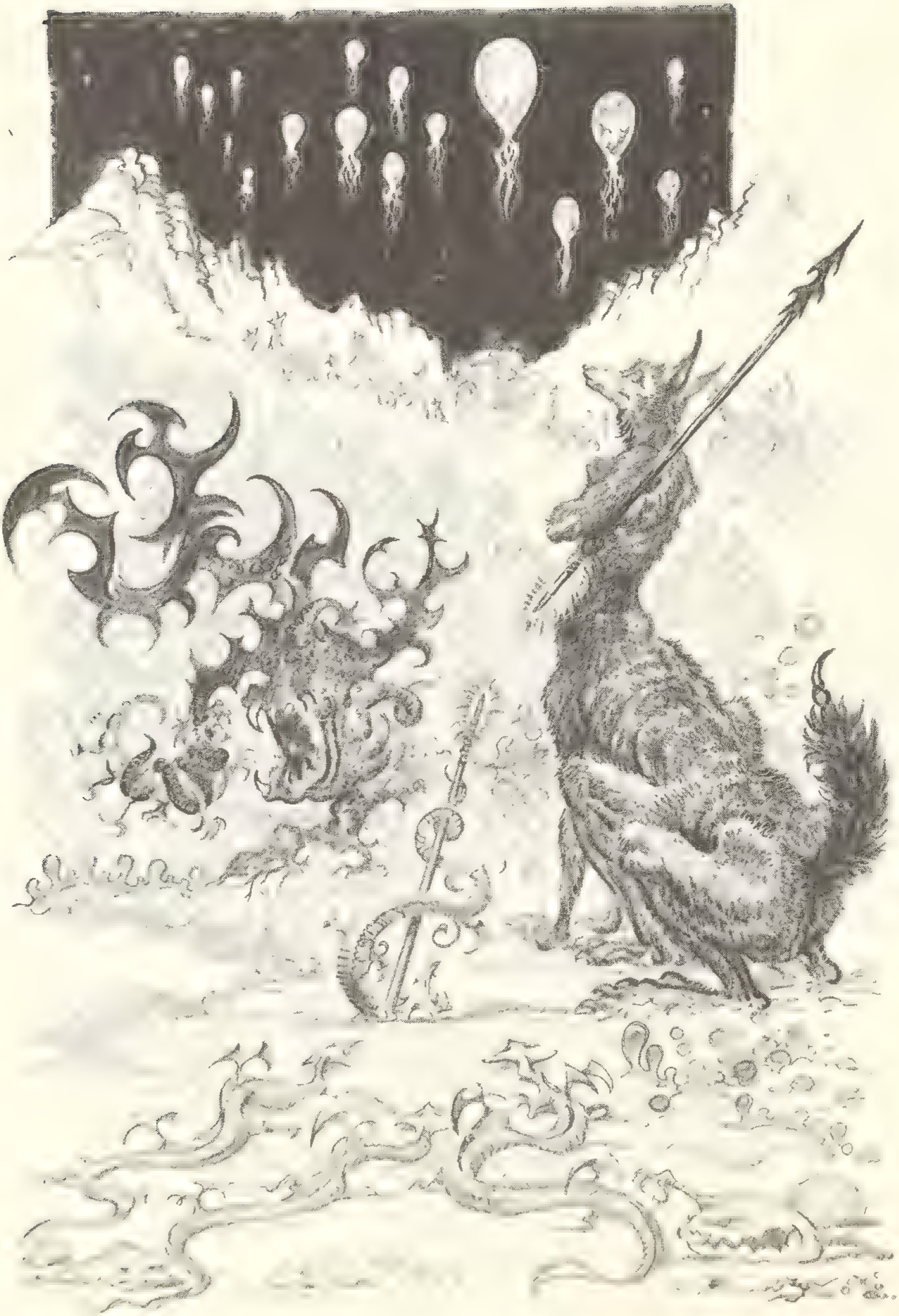
She nodded. "Thanks, but no. I'll fill my contract with Ch'ien Li, if anyone ever comes to guide me to her camp."

"Pick will show up," Jolly said reassuringly. He glanced about the barroom with fondness. "You could do worse than work for me, you know. Ch'ien's crazy. You won't last out there more than a month or so. Job'll be here when you come back."

She did not respond. The bar was crowded; the hotel was filled with ship personnel, members of various exploratory groups, government people, the science committee people . . . Three out of four of them were men; most of them would never leave Medea again. Nearly all of them watched her openly.

"The others," Jolly went on, "are working on such tight budgets that one more salaried employee would break them. Corum, Kuwait, Michaels, all of them. You'll get so bored out there with Ch'ien Li, you'll be back in a month, three at the most, and you'll need something to do . . ."

Irina stopped listening. It was not the salary, she knew, that had made the others turn her down. She would draw no salary during her five year contract on Medea. She had waived salary to insure her return trip home at the end of her five years, and that made her a dabbler, a mercenary in the



eyes of real scientists. Only Ch'ien Li had not objected, but Ch'ien Li had wanted no one at all, had accepted an assistant only because the science committee had ruled that she must.

For twenty-two years Ch'ien Li had been living in the field observing the creatures that were called fuxes, or foxes. She had published no results yet. Twenty-two years, Irina thought coldly. If Ch'ien Li could stand it for twenty-two years, she could stand it for five. She looked past Jolly at a boisterous man who had entered the bar shouting greetings to the bartender.

The newcomer was heavy with immense shoulders, abundant black hair, and a swarthy complexion. He seemed to know everyone in the bar, stopped here and there to pound someone on the back, to bear hug someone else, to chat and laugh, as he weaved among the tables.

"That's your guide," Jolly said. "Paulo Aranha, or Pick."

The big man saw her and charged forward until he reached the table where he stopped and leaned forward to examine her. "Irina?" His eyes were bloodshot.

"You know I am."

He sat down chuckling. "You're not the pretty little thing I've been dreaming about, tell you that right off."

Irina was a tall woman with broad shoulders, a large face with pale blue eyes, pale eyelashes and brows. She knew she was not pretty. "I expected you several days ago."

"Got held up. You ready to move out?"

"I've been ready since my second day here."

"Calm down. I'm here and we'll be on our way. Half an hour at the main entrance. See you there." He got up and strode away. She thought he was laughing at her.

Jolly stood up smiling openly. "You'll be back," he said with satisfaction. "Crazy old Ch'ien Li, Pick, snake vines, sting birds, rock monsters, heat, nothing to do but watch the little fuckers . . . You'll be back."

They left in an aircar that rose swiftly above Medeatown with its artificial white light and hard-edged shadows. Up here the light was dull red. It reminded Irina of a partial eclipse of the moon. Pick had changed also; his swarthy skin now appeared afro-black where it showed below the silver half mask he wore. She had one just like it, eye protection from the infrared atmosphere.

A flock of dooley birds had risen with them, paced them; when Pick leveled off and headed northwest the birds began to dive into the airstreams of the jets. She had read about them in her indoctrination, but seeing them was different. They were as large as eagles, with slender bodies, and dun-colored feathers. They were so tapered that when they folded their wings to dive, they looked like spears.

Below them the forests had been cleared and replaced by fields, the only visible green. The lush plants under ultraviolet lights stretched north and south, following the coastline. When they ended, the change to orange, umber, red, brown was abrupt and complete. The car climbed higher, then Pick set the automatic controls, and leaned back with his hands behind his head. Irina gazed in rapt attention at a dancing wall of lights, the borealis.

She was roused by his voice and turned. A cloud of living balloons was coming from the north, hundreds of them in a mass. She uttered a low cry and became silent again. The gasbags were every color, some pulsing with light, others opalescent, some so brilliant that it seemed they were being consumed by inner fire. They were level with the car, but abruptly they began to rise, straight up, moving together the way a school of fish does, changing direction as a single entity. Irina craned to watch until they vanished in the dense cloud layer ahead.

''They're like Portuguese men of war, except they're different,'' Pick said. ''Filled with hydrogen, with those damn appendages hanging down. That's what happened to Jolly; one of them took him for a ride and dumped him. Ended his days as a guide.'' He did not look at her as he added, ''If one comes down and you're in the open, you hug the ground, or dig in if you can. Best if you can find a big rock, bush, tree, something, but if you can't, you kiss dirt.''

''Colper's Bluff,'' Pick said later, pointing to a clearing in the lush forest. There was no cliff nearby, nothing but a circle of trees and a rather small open space.

''Why is it called a bluff?''

''He held off a pack of fuckers singlehanded there. No weapons, nothing but his voice. He yelled at them until they gave up and left.'' He chuckled at the memory.

Fuckers, fuxes, foxes. They were the creatures that Ch'ien Li was studying, the ones Irina would study also in order to determine their intelligence, which she doubted could amount to much, or Colper's Bluff would not be a landmark.

They flew over rolling hills, mountains, a wide brown river, a chocolate colored lake, umber plains, swamps . . . After a brief stop for lunch, they were buffeted by storms and the ride became a lurching, stomach-wrenching ordeal. The trees thinned out, were stunted, deformed by careless wind-pruning, and there were long stretches of ground with only grass-like cover and straggly bushes, all in shades of brown. This was uneasy land, earthquake country with high escarpments and steep cliffs, deep shadowed ravines. Twice they detoured around dust storms that hid the world below completely.

Finally a deep valley appeared with woods and a river. The trees were not very tall, and their leaves were sand colored, but the valley looked peaceful; no wind stripped the trees here.

"Home again," Pick said cheerfully as he took them into the valley. "There's camp."

His voice sounded loud after the long silence. The scowl he had worn for the past few hours had not been meant for her, she realized, but for the storm and the near hurricane force winds. "I'm glad it's quiet in here," she said, straining to see the camp.

He laughed. "Oh, it's quiet. You'll see."

She stiffened at the mockery in his voice and looked straight ahead. She could now make out the structures.

There were five white mounds that could have been smooth boulders in a clearing. Pick flew even lower and finally came to a stop before one of the mounds that had grown to the size of a one-story house. The side of it opened, and he glided the car inside. Irina was dazzled by the glare of white light when she pulled off her mask.

She got out stiffly and, blinking, looked about her. The dome was opaque plastic, filled with cool fresh air. There were two smaller cars, scout cars, and a complex of machinery: the power plant, air conditioners, purifiers, other equipment she did not recognize. An opening in the wall appeared and a tiny woman stepped forward.

Irina felt a jolt when she saw Ch'ien Li, who was a legendary figure on earth. She was no larger than a ten year old child; her face was bone white, her black hair was streaked gray. She looked as old as death.

"Here she is," Pick called as Ch'ien Li approached slowly. "I'm going to get some sleep. Unload later." He waved to the two women and left by way of another small doorway in the plastic.

"You must be tired also," Ch'ien Li said. She stopped some feet away from Irina and made no offer to shake her hand, or greet her in any formal manner. "Come. I'll take you to your room."

Ch'ien Li led the way through a short passage into another smaller dome; separate living quarters, a true luxury. Here there were personal furnishings—a bed, chair, desk, computer terminal . . .

"You may have meals here if you choose, or in the group room. I'm afraid my own hours are very irregular, however you and Pick may want to share mealtime. As you choose," Ch'ien Li said, indicating the room. "First rest, then we shall discuss the work in progress."

She regarded Irina for a moment or two, her own face devoid of any expression, then bowed slightly and withdrew.

Like a talking doll, Irina thought. An activated, old-fashioned talking doll.

The foxes were a thousand yards downriver, clearly visible from the camp, even more visible from an overlook perched three hundred feet up a rocky hill where an observation post was also set up. There were sensors in the foxes' village. Observation was both direct and through computer replay, and it covered them as thoroughly as the eye of God, Irina thought. All of Ch'ien Li's work was in the computer; Pick taught Irina the codes they used. Twenty-two years, she thought with dismay.

"The camp is protected by an electric fence," Pick told her the first day, guiding her around it, showing her how to deactivate it. "Whenever you're out, be sure to wear the control belt. Hit the button at the line, release it at the next line, you're in free, and whatever's after you gets zonked. Okay?

"We kill nothing here," he said. "The charge in the guns is for stun only. The fence is on stun. We want to stop them, not harm them. Can you fly?"

He taught her to manage the aircars, and then went on to teach her the basics of the equipment in the maintenance room.

He was always patient, never condescending, but she felt her arrival was an irritant to him. As soon as he was satisfied that she could manage the aircar competently, that she knew what to look for if any of the machinery malfunctioned, he resumed his own pursuits. Day after day he left in one of the small cars and did not return for many hours. He was making maps, he said in answer to her questions; he was searching for evidence of older civilizations; he was poking around to see what there was to see.

After instructing her to review the work, Ch'ien Li had paid no attention to Irina.

The days passed slowly and gradually Irina began to realize that this was what Jolly had meant: Ch'ien Li would drive her away by ignoring her, by letting boredom eat into her bones until she could stand no more. She went to the group room and sat before the terminal and waited for Ch'ien Li to appear. While she waited she played through a tape of one of the foxes Ch'ien Li had tagged years ago.

The creature was immature, the size of a half-grown cat, it had eight legs, and moved so fast that, played back in real time, its movements were blurred past comprehension. She played it back slower and slower until each motion was visible. It was catching insects and small crustaceans, using its forepaws as dextrously as any human surgeon used her hands.

For a time Irina played back bits of the fox at random, but then she started over and let the computer show her the bits that Ch'ien Li had tagged as significant. The fox, nearly grown, weaving a basket, quickly and surely with little wasted motion. The same fox digging in the ground, dropping seeds, cultivating a row of orange plants. Then fighting savagely with a winged creature twice its size. Being cared for by other foxes with only four legs . . .

"At first we thought there were three species, closely related, of course," Ch'ien Li's voice said, close to Irina's ears. Irina had no idea how long the woman had been standing behind her. "But then we realized that each metamorphoses into the next phase."

Irina stood up stiffly, ready to confront Ch'ien Li with the injustice of her treatment, but the older woman motioned her to a long table, preceded her to it and sat down. Ch'ien Li touched the food panel and two cups of steaming tea were deposited before them.

"They are born female," she started with no preamble, as if unaware of Irina's impatience. "At maturity they mate, and a pair of legs is detached when conception takes place. Within the placental pouch there are usually twins who grow and feed inside it until they are large enough to be quite independent. During this incubation the female maintains a guard over them, within a nursery with other incubating young assisted by other mothers. The mother is freed from constant surveillance and she is very active in community affairs, making tools, farming, hunting, sharing time with other young females in the nursery. When they emerge, the young are protected by the entire community, but they are also independent for about a year, when schooling begins. They are taught hunting, the various village skills, and so on. When the female mates a second time, the next pair of legs is detached and the process is identical, except that now the female becomes an immature male; her genitals drop off with the second brood, exposing male organs. This is a very busy time for the young males, they have much to learn. They must practice walking and running in an upright position now, and they must learn to glide all over again, as the distribution of weight has changed drastically. They become the most adept at soaring, gliding, at times apparently achieving true flight. They are very aggressive at this stage of development, they roam in groups and ravage other communities, or engage in wholesale battles. They learn to use more advanced weapons, spears and even bows and arrows. And then the next stage occurs, and they become mating machines, those who survive the fledgling period. Most do not survive. And then," Ch'ien Li's voice became lower, and she sipped her tea thoughtfully. "And then, they change again. Only a few out of each hundred survive to reach this phase. They are neither male nor female, but have achieved true integration of the two selves. They have experienced every phase this species goes through. They are the leaders now, the community judges, teachers, doctors, priests. All this in less than fifteen years," she said. "None has lived beyond fifteen years."

She stopped, and Irina remembered her tea and lifted the cup to her lips. Something was not right, she found herself thinking. "They are too small," she said finally. "The brain pan is too small. They are too short-lived. How could they have achieved intelligence in a lifetime so short, with so little brain?"

Ch'ien Li shrugged, her face as blank as a painted surface. "They could not have done it," she said. "However, if they are not intelligent, then they have the most advanced instinctual social behavior of any group ever observed. Either way, we must rewrite many books. I must rewrite many books," she amended.

Irina studied her. How old was she? Over a hundred, too old ever to return to Earth, too old probably to finish her work here, and yet daily that frail woman climbed the rocky hillside to the observation post high over the foxes. She knew Ch'ien Li worked around the clock with three- or four-hour pauses for sleep. What was driving her? What held together those frail bones, kept the blood flowing, kept her brain functioning? This one little puzzle about the foxes? Irina could not believe it was that simple, that easily answered.

''What are my duties?'' she asked then. ''I have been tutored by Pick for weeks now. Surely I am not to serve here as a backup maintenance person and a reviewer of your work.''

Ch'ien Li smiled gently at her. ''Review as much as you can first,'' she said. ''It is all there. We have tagged one hundred fifteen foxes to date. Six remain alive. Five of them are still in the main community many kilometers from here. One is here with this group that two years ago began a journey which is not yet over. We don't know why, or where they are going. We shall follow until we do know. But until they move again, there is very little to do except watch, review, meditate.'' She stood up. ''I am available in my room if you require me. It is always the waiting that is the hardest part of any expedition, my child. The waiting is what drives many people back to civilization. We shall see. We shall see.''

After Ch'ien Li had withdrawn to her room again, Irina continued to sit at the table. She swished her tea, drank it down, and stared into the cup. There were no tea leaves, but she pretended anyway.

''I see you in a long green dress meeting tall dark men, and short blond men, and fat bald men . . . I see you watching a furry animal fucking away . . .''

At least, she thought, shoving the cup into the receptacle that whisked it away, she had discovered the answer to the puzzle of the creatures' names.

She drummed her fingers on the table, and then went searching for Pick. She found him working in the maintenance/hangar room. He didn't look up.

''What are you making?''

''A still.''

Fascinated, Irina moved closer. There was a large sealed pot, and many coils of tubing not yet joined to it. ''What will you distil?''

He chuckled. ''There's always something.''

''Ch'ien Li says you go to Medeatown every two months or so for supplies. Are you going soon? It's been nearly two months now.''

''You got any shopping to do, make a list.'' He bent a pipe, measured it, bent it some more.

''You could bring enough supplies for a year at a time if you wanted to.'' She bit her lip when he turned his back on her. Then she said, ''If you make your own liquor—''

''Brandy.''

''Brandy. You won't need to go to town to get drunk. You go for a woman, don't you?''

Pick took up another section of the tubing. He did not look at her. ''Are you getting horny?''

''Yes. And I don't want to have to go to that ghastly hotel . . .''

He whooped with laughter and Irina found herself laughing too. It had been so simple after all.

Pick put off his trip to town until they were actually running low on food, and then he stayed only three days, and when he returned, he announced that he had brought enough back to last a year. He winked at Irina. Ch'ien Li nodded gravely.

One day Irina joined Ch'ien Li on the observation perch on the hillside. There was a shallow cave protected by a screen of electricity; within the cave was yet another computer terminal, some air cushions, and nothing else. Ch'ien Li sat on a cushion watching the foxes below. She was like a bat, Irina thought, clinging to a dark spot.

''They aren't mating,'' Irina said. ''I have reviewed them since they left the city, and they have not mated at all during this journey. Why?''

''We do not know,'' Ch'ien Li murmured.

''And the young males don't make forays; they aren't fighting among themselves.''

Ch'ien Li nodded.

''Kuwait is having success in making contact with them,'' Irina said after a long silence. ''They have language. That chanting we hear day after day, the clicks and growls, it is language, not random.''

''So it seems.''

Irina drew in a deep breath. Below, the foxes were assembled in several concentric rings, hunched down on the ground, motionless. The neuter was inside a shelter made of smooth poles, covered with skins. There was no motion below, no sound now, although at any moment they might begin to move again. When they did, it would be impossible to comprehend. If it was a dance they did, it made no sense to Irina; the movements appeared too random. As one they would rise and start dashing here and there, or leap over and over, or walk zombie-like in no discernible pattern just wherever their feet took them, turning when the spirit moved apparently. Sometimes they kept it up for minutes, sometimes hours, sometimes for days, when they stopped it was as abruptly as they began.

''They know we're here,'' Irina said. ''In the beginning, they tried to approach many times, and you repulsed them. Why? This is the way you observe animals, not intelligent beings. They have language. We could learn to communicate with them. This is merely animal behavior technique you are using.''

She kept her gaze on the foxes below, her body rigid, waiting for the rebuff.

''Who am I?'' Ch'ien Li said quietly. ''Ch'ien Li. Elizabeth Mary Barrister. Old woman. Scientist. Anthropologist. Ancient human being. Earthling. Leader. Mother. Sister. Daughter. Aunt. Writer. Teacher. Female. Perhaps neuter. There are more. Meat eater, carrion eater. Tea drinker. Without context the question has no meaning. Without a mutual set of assumptions the question answered is the same as the question unanswered.''

She regarded Irina calmly. ''Until very recently we did not even know the four-legged ones were the result of the natural development that all go through. Where are these hundred going? Do any of them ever live an entire life span without succumbing to disease, injuries, death by mishap? How can creatures with such small brains develop architecture? Medicine? We don't know. Until we have an inkling of what their lives are from start to finish, we do not know the proper questions to ask them. Questions without meaning, that is what we would mouth. My child,'' Ch'ien Li said softly, ''have you not studied how the work of most major researchers was invalidated because of their active participation in the very effects they were studying? I repulsed them,'' she said, turning again to watch the foxes. ''I erected a barrier they can not cross, and keep myself aloof from them. It is not enough, I know, but I have done my best not to interfere with their lives. And I have felt the terrible frustration of inactivity that tortures you.''

Irina got up abruptly and deactivated the screen, stepped out into the dim red light that felt like the interior of an oven, and started back down the hillside in defeat.

Overhead, high above the updrafts of the valley, gasbags rode the wind swiftly, vanished, reappeared to repeat the sport again and again. Snake vines had crept close to the compound; Pick was making his daily sweep of them, stunning them in order to remove them and deposit them far away from the camp. Sometimes a flock of birds or other flying animals appeared, attacked the foxes, who no longer fought back, but simply retired to the shelter of their temporary quarters. Sometimes the flying creatures made swooping attacks against the three humans, but more often they chose the prey they knew.

Irina was having many dreams in almost every sleep period. She dreamed she wore a flowing green gown, and stood at the side of a fountain that splashed with bright blue water. She dipped a pitcher into the pool and poured the sparkling water into golden goblets held by multitudes of naked men. The men turned into foxes and they dipped their tails into the water, and then began methodically chewing them off, consuming themselves bloodlessly until only the heads and necks remained. They rose into the air and vanished, riding the winds with the gasbags. She dreamed a gasbag pursued her over the rough hills, down valleys, up mountains, over chasms and gorges, never gaining on her, never leaving her, and as she raced over the rocky terrain, her feet bled and the flesh pulled off in strips exposing the bones. Finally, unable to run any longer she flung herself to the ground, and before her eyes there was an ancient fox, standing upright, its immense eyes like black windows into infinity. She was sucked toward the eyes that grew larger and larger and finally were all there was.

She sat upright in bed, breathless with fear. Awake now, she felt something had wrenched loose inside her, something vital had disintegrated without warning; without it, that mysterious something, she was paralyzed, set adrift in a void that was drawing her away from this place, away from the people with her, away from life itself.

And even though she was filled with terror, she felt that whatever it was drawing her away from here and herself, was also promising her something more important than anything she might lose.

Shivering hard, she left her bed and dressed shakily and made her way to the group room where she found Pick and Ch'ien Li in conversation.

''There is an emergency,'' Ch'ien Li said, her quiet tone mocking her words. ''We are discussing the proper procedure.''

She indicated a chair at the long table where she and Pick were seated. ''You have bad dreams,'' she said softly. ''I am sorry.'' She touched the button for tea.

''What is the emergency?''

''Our other sensors, the ones we installed at the fox city have malfunctioned, or have been destroyed. We can't tell which. There was a terrible storm, an inland hurricane that brought great tides to the lake and sent mountain flood rivers into the valley. The city could have been swept away entirely, or perhaps only the sensors were destroyed.''

''And the other foxes that you tagged?''

''Silence. They are no longer transmitting.''

Irina sipped her tea. ''That leaves only this one?''

Ch'ien Li nodded.

''Twenty-two years of work, with only this one left to prove or disprove anything!'' Her cup clattered to the table and she clenched her hands hard. Ch'ien Li would start over, she thought suddenly. She would find a new city, or colony, whatever they were, and would tag another hundred, two hundred, and start the long observations all over again.

''We are trying to decide if Pick should fly back and observe the damage personally. I think so. But there are difficulties. Without transmitters, finding the city again will be time-consuming. Pick will retrace our trail of two years; a tortuous trail it has been.''

''I'll find it,'' Pick said. He was watching Irina. ''But it may take me a week or longer and I want to know something before I leave.''

Ch'ien Li made a clicking sound.

"What do you mean?" Irina demanded.

"I checked up on you the day you got here," Pick said. "I didn't trust you. I've wanted to ask from the beginning. Who are you working for? Why did you waive salary to come to Medea? You're just going through the motions. Ch'ien Li's work doesn't mean a damn thing to you."

"I have passage home," Irina said. "I accepted expenses and guaranteed passage home after five years. I couldn't get passage *and* a salary." She was rigid with fury that he could have been her bedmate all these months and still be suspicious of her. Or jealous.

Ch'ien Li's eyes glittered and a smile appeared and vanished so fast it might have been an illusion. "Ah," she said. "You invested money. You will have been away for a hundred years. It will be a fortune. I see."

"You see nothing!" Irina snapped. "A fortune! Even if I am allowed to keep a tenth of it, a million dollars, what is that on Earth now? I expect to live a hundred twenty years, possibly more. How long would such a tawdry fortune last if every day you have to buy again and again some fleeting relief from boredom? What is there on Earth for anyone with a functioning brain? By day it's a siesta, and by night drink and gambling, for those who can afford it. Wherever you go, the same. For people like me, any working people, there is not even that much available. Within ten years I would have nothing and then what? Sift the ashes once more, rewrite the books yet again, teach a few dilettantes an arcane subject that they will never use? No!" She took a deep breath, then repeated, "No. I'll go on tour, speak, write my book, be a celebrity for a short time, and during that time I'll charge the limit. And after that I'll combine my investment and my earnings and I'll return to Medea. And I'll be a Croesus! What a pity you'll be dead, my dear Pick, but there will be others I can buy, won't there? Maybe your bastards running around barefoot in Medeatown, or theirs."

Pick's great hands clenched. Irina rested her own hand on her charger. "I would just as soon use it on you as any other wild creature here," she said.

They stared at each other, unmoving, until there was a faint sound from Ch'ien Li. Irina glanced at her. The old woman was laughing.

"He is afraid that if all the other tagged foxes are dead, any accident here could bring an abrupt end to our many years of work. Financing to start over would be very difficult."

Irina stared at Pick in disbelief. "You think I could sabotage valuable research?"

"You haven't exactly kept it a secret that you don't think this is the way, that you don't think this is going anywhere."

Ch'ien Li raised both hands. "You will prepare to leave as soon as possible," she said with finality to Pick. "Take the big car. The storms may still be very bad."

''What if there is trouble that I can ease? Should I try to save any of the tagged ones, if they are still alive?''

''You do nothing,'' Ch'ien Li said flatly.

In the beginning Ch'ien Li had flagged all the unusual behavior, but gradually a program had been developed for the computer and it had been able to take over that task of comparative analysis of the minute by minute, second by second actions. If one of the foxes sneezed, the computer would flag it; Ch'ien Li and Irina would study that part of the continuing record. But the days passed and nothing was flagged; no behavior out of ordinary was noted; the foxes ate, slept, formed their rings, went through their dances, and nothing changed.

Irina had not realized how much she had come to rely on Pick to relieve the monotony of the camp. They had not talked very much, but he had recounted his mapping expeditions from time to time, and he had complained about the air conditioners, and the lights, and the food, and in that silent place his complaints had passed for conversation. And he had been a very good bedmate. Often Irina and Ch'ien Li sat silently for hours in the group room, each preoccupied, Irina with the endless review of the past twenty-two years, and Ch'ien Li with the minutiae of various episodes that had stood out as extraordinary.

The foxes had started this journey over two years ago. When they traveled, they moved very fast, but each such advance was followed by weeks, even months of the same kind of inactivity that had stalled them here. They had traveled through the temperate forests, over mountains, across rivers, through the tropics, and now were on the edge of the great central desert that was the heart of the continent. They planted nothing on their trip; they hunted and gathered wild foods. Their only other requirements from the land were space to assemble shelters, and water which they collected in skin bags. The building materials they had brought with them.

Irina realized that for a long time she had not seen what was on the screen. She could remember no thoughts at all, only a blankness, as if she had fallen asleep with her eyes open.

''I'll go to the observation overlook,'' she said.

''My child, you are so restless. You have been up there three times today.'' Ch'ien Li turned off the console she was studying, and turned to regard Irina. ''Have you read my book on the artifacts we found on Mars?''

Irina nodded. ''You decided they were not indigenous.''

''Yes. And that was the push for this exploration. Mars was stranger than Medea, I think. So close to home you could see Earth shining in the sky and in your mind you could see your friends and family walking about, playing, doing what people do everywhere, and all the while seeing it, knowing how close it was, it was as if you had stepped into another universe. I wonder if our distant cousins who left the seas for land didn't feel the same thing: an unexpected freedom from something you never knew was a restraint until it was gone.''

Irina had stood up, now she sat down again, and for the next hour Ch'ien Li talked about Mars, about the expedition where she had been as subordinate as Irina now was.

''Like you,'' Ch'ien Li said, ''I was bored with rehashing the same work others had done quite thoroughly. How I longed for a new civilization to be uncovered, a whole new people to unriddle. And we had to go to Mars to find them. Only to find that they had not been from Mars at all. This need for what is new, for the undiscovered, I wonder, is it a sign of intelligence after all? Or is it merely another instinctual behavior pattern? Where is the boundary?''

Irina laughed shortly. ''Your work was of the highest intellectual order. Every award possible was bestowed on you. No one ever doubted for a moment the magnificence of your discoveries.''

Ch'ien Li regarded her for a moment, then shook her head. ''I made a guess that I wanted to be true, and then went on to find the proof. Hardly scientific. Totally irrational. Intuition, instinct, wish fulfillment, fantasy, that has been the basis of all my work.''

Irina felt a great weariness numb her and she could not argue with the old woman. ''And this research?'' she asked, and did not care what the answer was.

''The same,'' Ch'ien Li said. ''Exactly the same as the rest. I want them to be intelligent, not merely instinctual creatures. I want this journey of theirs to be more than a new settlement searching for a home. I want and will have a higher significance in their behavior than simple immigration.'' She never made gestures when she spoke, and her face seldom became animated, but now she smiled, revealing teeth that looked like two rows of polished rice. ''I am quite crazy, my child. Anyone in Medeatown will tell you the same. I am so determined that I will impose my will on these creatures and force them into significance.''

Pick's voice interrupted the conversation. ''Here it is,'' he said. He sounded very tired. On the monitor there appeared a scene of desolation. Flood waters still swirled throughout a valley, but there were indications that the water had been much higher than it was now. Bits of worked lumber were lodged in trees, and there was a line of shrubs and uprooted trees above the present flood. Nowhere was there a sign of a building until the cameras panned the hillsides over the valley, and here and there a solitary dwelling remained. They appeared sturdily built of wood and stone. The camera stopped on a small group of foxes of mixed ages, who were digging with metal tools in the rubble.

''The neuters?'' Ch'ien Li asked.

''No trace. I think there are fewer than five hundred survivors, and many of them have left the area, dragging a few possessions along with them.''

Ch'ien Li was silent; her reaction was that of defeat, Irina realized, and did not know exactly why. The old woman sagged now, her face looked caved in, her eyes dulled.

''It was not foreseeable,'' Pick said then with some force. ''The storm, sure. But no one could have known there would be a rockslide high up in the mountains. The slide caused a flash flood when a lake was dumped. That's what happened here. It wasn't just the storm.''

''Are you certain?'' New life had come to Ch'ien Li's voice, her back was straight again. She leaned forward in her chair.

''No mistake about it.''

''Come home, Pick. Come home. You deserve a rest.''

''Why is it important that they were aware of the approaching storm?'' Irina asked after Pick's report.

''In our years of observation we have never seen them surprised by a storm, or a solar flare, or any natural phenomenon. They are always safely inside, or on high ground, or otherwise protected. They have an ability to interpret signals that are not apparent to our equipment, not merely barometric changes, but more than that. It is one of the puzzles.''

That night Irina was roused from sleep by the beep-beep of her terminal, and when she got to the group room Ch'ien Li was already there. Her hair was down her back to her buttocks, the first time Irina had seen it so. Always before it had been in intricate braids that wound and rewound on her small head.

''The next phase has started,'' Ch'ien Li said, and her voice betrayed excitement, also for the first time.

The foxes had formed two lines and were marching out of the valley. In the center of the lines the old neuter walked, surrounded by a dozen young males. Many of the foxes wore harnesses, some in tandem, and they pulled carts loaded with their possessions. Every structure had been dismantled; every hut, shelter, every trace of their residence in the valley had been removed. They marched very fast, almost at a run, and when they reached a high point where the valley began to rise, the forward foxes, males and females, soared up into the air and rode the winds above the others—a procedure that was to be repeated throughout their march.

High above the entire group gasbags darted, as if in curiosity, defying the prevailing winds, to maintain a second level of observation.

''You must follow them,'' Ch'ien Li said. ''Keep them under observation in the small car. We must not lose any part of their journey. Pick says you are very competent in the car. When you are ready, I'll instruct you. Go now, get dressed, I'll start dismantling equipment here.''

Irina could not deny the small feeling of satisfaction the old woman's words gave her. Pick had never told her she was competent. He had grunted, and had gone on to other lessons without comment. She nodded and started to leave the group room. In her peripheral vision she saw Ch'ien Li clutch the table as she passed it on her way to her own room, and for several moments remain there, hunched over. At first she assumed Ch'ien Li had stopped to pick up something, but the continued immobility of the other woman dissolved her glow of self satisfaction, and she turned toward her.

"What is it?" She went back to Ch'ien Li. Her face was like putty, her eyes closed. Irina pulled a chair near, then helped her into it. "There must be something you take," she said. "Where?"

"Hypo. My room." Ch'ien Li put her head down on her arms on the table.

Irina ran to her room, found the hypo, and ran back. She examined the instrument; it held a premeasured dose. Working swiftly now, she depressed the button that released a sterilizing spray on Ch'ien Li's arm, and then held the end of the instrument against the spot for a count of three. Not knowing what else to do, she kneeled on the floor by Ch'ien Li, and held the old woman in her arms while they waited for the medicine to take effect. She was startled by the frailness, the thinness of the body she held. Ch'ien Li was very stiff, and only gradually did the rigidity leave her. She sighed and raised her head. Irina released her and stood up again.

"You will not mention this, of course," Ch'ien Li said; her voice was thin and wavery.

"What is it?"

"It doesn't matter. I became excited and forgot to take my medicine. I am sorry." Her voice regained its firmness as she spoke. Her face was still gray-white, but her eyes were alive again, and, as if to prove she had fully recovered, she now pushed herself away from the table and stood up. There was a touch of unsteadiness in her movements; none at all in her voice when she spoke again: "Go get your things together now. Only what you will need in the next two or three days. We should catch up with you before then, but if we are delayed you should be prepared. We will break up camp here and bring everything else with us."

"I can't leave you alone!"

"You will do as I say! Report for instructions before you leave. And you will not mention this." When Irina shook her head, Ch'ien Li said, "Very well. When Pick returns, tell him I am keeping the foxes under observation. He will know what to do. And on his arrival, you will transport yourself to Medeatown in the other small car."

Soon there were no more trees as far as she could see. There were scattered misshapen shrubs or cactus-like plants that grew horizontally inches above the ground. There were rocks, sand, and lava beds, and nothing alive except the double columns of foxes trotting through the wilderness; and above them soaring foxes, and above them other flying creatures that would be called vultures on Earth, and here might be altogether different; and finally above all, the gasbags, more and more of them now, and they too behaved like vultures gathering for a feast that was not quite ready.

Irina knew this was a land of deception; many of the rocks were really rock demons, creatures that would come alive and move with startling ease to capture prey; some of the bushes were not vegetable, but another animal species that could assume half a dozen shapes, and again, move rapidly when prey approached. Irina dismissed the known, and probably even more unknown, dangers on the ground below, and concentrated on the foxes.

They avoided any confrontation unerringly and maintained a steady trot even though the land varied considerably in roughness; in some places it was covered with jagged rocks, other places with deep sand, then again with lava. The soaring foxes rode the wind easily, with grace and beauty. She never had thought of them as beautiful before, but out here, at ease with the steady hurricane-force wind, hands outstretched as if they were diving, they used their fingers as delicately and precisely as a concert pianist to test the flow, and the response of the thick tough membranes was instantaneous, a ripple, or a dip, or a sudden tautness or relaxation . . . They were soaring, singing, making music that no living creature other than those performing would ever hear.

When the foxes abruptly halted and began making preparations for a rest period, she was startled. It had seemed minutes only since they had left the valley; actually nine hours had passed. She had little sense of fatigue until she swept the ground with the electric charge, waited until three rock demons flashed out of sight, and settled the car. She turned on the electric curtain, and only then felt her aching muscles and her throbbing eyes. She became aware again of the howling wind that rocked the car from time to time.

The foxes erected wedge-shaped shelters, the openings away from the wind, and they vanished inside, leaving half a dozen guards on duty. Irina found herself adding the interpretation without volition. They *were* guards, she told herself firmly, and she stretched out to try to nap while she had the chance.

Instead, she remembered an experiment she had performed as a student in her undergraduate days. She had constructed a rat village where there was abundant food, water, warmth, everything the animals needed, and after they had become familiar with it all, she had added a small, dark passage with many turns, places where there were drop-offs, and nothing to indicate what was at the other end. And they had gone into it, explored it thoroughly, not for any rewards, at least no rewards she had furnished, but apparently out of curiosity. Curiosity, she mused, instinctual curiosity or intelligence?

She was awakened three hours later by the beeping of the computer, and now she was fully aware of her fatigue as she pulled herself up and watched in disbelief as the foxes took down the shelters and prepared to resume their race to something she could not anticipate. They had trotted for nine hours, rested for less than four, were ready to go again.

The next ten hours were like the first nine. The foxes moved steadily, avoided the rock demons, the pseudo bushes, and other objects that Irina flagged for attention later when there would be time for detailed examination of the record. During their rest period they had eaten; while they were on the move they neither ate nor drank anything; they did not pause, or slow down, or hesitate at any of the obstructions they encountered. When there was a cliff to climb, they zig-zagged up it; where there was a chasm to cross, they fastened ropes to their carts and took to the air to slide on the wind, hauling the carts across, then resumed with as little interruption as possible.

None of the airborne predators or carrion eaters ventured very close, and Irina wondered if foxes on the march were viewed here much the same way as mother bears with cubs were viewed on Earth.

The motion of the small car was a dart forward, a hovering while the foxes drew up even and then passed it, another dart forward . . . At no time were the foxes out of range of the many scanners and sensors that recorded their every movement, every sound. When the car hovered, Irina could move about, replay in slow motion the bits that showed the incredible soaring maneuvers, eat, even bathe; but she could not relax.

Was it merely a lemming march, or was there a plan behind it? She bit her lip and watched the foxes and tried to choose one or the other answer, and each time was forced to admit that she could not choose. They did not know enough yet.

The intensity of the wind increased, and now the foxes were obviously suffering from the constant whipping of wind and wind-driven sand, but they did not slow their pace, and their rest periods were no longer than four hours after each eight- to ten-hour run. Irina needed stimulants now, as soon as the beeper woke her up, again two hours later, and then again; and when the rest periods came, she needed sedatives to counteract the stimulants and permit her to sleep. She lost count of the rest periods—four or five, possibly six—and she no longer reviewed the material in the computer, but sat doggedly at the controls; when it was time to move, she did so, and when it was time to hover and wait, she did that, and trusted the machines to do the rest.

They had been climbing for a long time, sometimes going part way down the other side of a hill they had just climbed, but generally moving upward, always upward. The radarscan showed mountains; they were not visible to her unaided eyes.

Periodically she reported back to Ch'ien Li, and at one point she learned that Pick had returned and they were on their way to meet her. They would home in on her signal; there was nothing she should do except carry on.

She was deplaning from a transport that had taken her home from Africa where she had studied for two years. Outside, snow had fallen early, and she was eager to feel the wind in her face, smell the clean wet snow. She had to wait a long time for the regulations to be fulfilled—someone had to inspect the cargo—and while she waited she strolled through a garden and clipped the heads off all the red flowers she saw. She noticed a small doorway that she never had seen before, and she went to it and opened the heavy metal door. She could see a winding passage without lights; it smelled like stagnant pond water. Glancing about quickly to make certain no one was there to stop her, she slipped into the passage and shut the door.

A blast of hot air shook her, and the wind shrieked in her ears. She staggered back shaking violently, and slammed the door of the aircar. She hurried to the controls and saw that she had landed the car on a plateau. The foxes were all on top of it now, not yet too far from the sensors. Still shaking, she lifted and moved forward, and only after she stopped, hovering this time, did she consider what had happened.

She had dreamed so vividly that she had acted upon the dream. She had hallucinated. It was the effect of the drugs she was taking, she knew, and found no consolation in the knowledge.

It was becoming harder to control the aircar; updrafts were stronger here, and there were cross currents of wind that caused unpredictable turbulences. She could see nothing but the rocky peaks, wind sculptures in stone, and behind her, down the slopes, swirling sand.

Pick and Ch'ien Li caught up with her during one of the rest periods. Irina heard the voices insisting, insisting, and could not make out what it was they wanted her to do. She told herself to sleep until the beeper sounded; she told herself the voices were part of her dream, but reluctantly she admitted them to consciousness, and stumbled up and to the console where she turned off the electric screen and unlocked the door to admit Pick.

"Whew!" he said, studying her. "Come on, sack time for you. Taken a beating, haven't you? But you did it, and that's the thing. Come on. We'll all stay together in the big car from now on. No, don't take a pill. You're just moving from one bed to another. Let's go."

He was talking cheerfully, killing time to allow her to reorient herself from sleep to wakefulness, she knew, but her mind was foggy, it kept slithering out of touch. The sedative was still in control.

She checked the computer console, turned off the alarm she had set to alert her if the foxes should have broken camp early, and then looked around dully to see if there was anything else she would do. When Pick took her by the arm and guided her from the car, she followed obediently. The hot wind stung her, shocked her awake.

She needed no more sleep, she protested to Ch'ien Li, who steered her toward the rear of the car where bedding was released from the wall, a curtain partition was unstrapped, and there was no motion at all from the wind. Ch'ien Li helped her undress, the first time since she had left the camp, and tucked her into the airbed which yielded, adjusted to her body temperature, and soothed her.

"You were a great comfort to me, my child," Ch'ien Li said softly. "I knew I could trust you, and now Pick knows it also. I did the unpardonable. I slept instead of working to ready the camp for our departure. Pick was further delayed and you were left alone far too long. You did a good job, my child. Tell me, were you bored?"

Irina could no longer keep her eyes open. Ch'ien Li's voice seemed to come from a great distance, and she listened to the rhythmical cadences rather than the words. "No," she said with great effort.

"We can't go much higher in this car," Pick said after three more rest periods.

They were high on the flank of the mountain, and up here there were no more plateaus, no more flat places for the car to rest, and the wind blew with such turbulence that each lift now was questionable; it seemed the wind lifted with the car, and then whirled into a vortex that sucked it down harder than it had been lifted.

Pick turned to Ch'ien Li, waited. She was watching the foxes prepare camp. They had halted in a hollow between massive boulders where there was comparative quiet. The summit of the mountain was two or three marches away. Progress had been slowed by the roughness of the terrain here, and by the heat and the wind. The foxes looked exhausted and woebegone, their fur matted and filthy; some of them limped badly, and at least twenty had been abandoned along the steep climb when they no longer could keep up.

Irina was scanning the mountain slowly; she stopped, backed up and studied an area on the console. "Pick," she said, "could we get to that hollow?" Pick and Ch'ien Li looked. "If we can anchor the car there, in the dip, out of the wind, we could climb up and put sensors here, and here." She pointed at the spots.

"We could even observe them visually for the rest of the climb from there," Pick said.

While Pick slept, Irina and Ch'ien Li shared duties. There was little to do now except wait. Above the dip the wind screamed, but it seldom reached into the opening among the rocks where the aircar was moored. The sensors were in place, faithfully recording every tortured step upward the foxes made.

"When did you decide to apply for Medea service?" Ch'ien Li asked. "Everything of public importance is in the dossier, everything but the interesting parts. When? Why?" She laughed lightly. "Our curiosity becomes simple impertinence."

Irina shrugged. "I don't mind. I was in Africa studying with Raoul

Claude. I was his protege, his star pupil, and we became lovers. After ten years I realized there was nothing new in our work, that he searched for nothing new; he was content with his research just as it was and wanted nothing more. When I mentioned my doubts about our work, he accused me of naiveté and youth!'' She paused and reflected for a moment. ''He was right. I was young and naive enough to believe there was more than we were doing, studying a village that had been studied countless times already, using an interpreter from the village who had gone to the same university I had attended, studied the same texts, believed the same theories. I applied for this. Raoul tried to stop me. He turned in a bad report, but it was so patently biased that it was ignored. Or else no one cared about the quality of the people who were sent to Medea. I still don't know which is true.''

''The first,'' Ch'ien Li said. ''There is a severe shortage of adequately trained anthropologists. That had become one of the dead sciences before my time even. Your ancestors were the infamous Viking marauders sailing their terrible ships across uncharted seas. The Vikings who actually left home and discovered new lands and had adventures were a minority. Their compatriots stayed home and trembled at the thought of the great unknown, and looked down on those who sought it as immature, naive, ignorant, selfish . . . little changes except the means. We tell ourselves and the others who stay behind that we need to acquire knowledge, that knowledge for its own sake is the only goal we have, and we lie. Unconsciously for the most part, because we too believe those words. We have invented the whole miracle of language in order to rationalize what is irrational—our own actions.''

She looked at the console and watched foxes struggling upward, clinging to bare stones, inching their way now with agonizing slowness. ''Even they,'' she said, ''even they share this need to wrap actions in symbolic mysticism. Whatever it is they will do when they have achieved the pinnacle, they could have done below. Sacrifice of the eldest? A religious ceremony? A period of meditation? A group suicide? There is nothing they will do here that they could not have done below easier and more economically, and if we asked them, if we had perfect understanding of their language and put the question to them, no doubt they would have answers that would sound very logical and correct.''

Irina shook her head slightly in annoyance. ''My reasons are clear and simple,'' she said. ''I told you. I shall become very rich and then live exactly as I choose, do exactly what I want, the research that interests me. That is quite simple. And understandable.''

Ch'ien Li smiled, nodding. She said nothing, and her silence was more annoying than any phrase she could have uttered.

Pick joined them and Ch'ien Li withdrew to sleep. Irina was still thinking about the conversation she had had with Ch'ien Li, and for a long time there was silence in the car.

Security and intellectual explorations, Irina thought, that was the issue. Ch'ien Li was telling her she could not have both, and Ch'ien Li was wrong.

"I'm going out," Pick said suddenly.

She had been vaguely aware of his restless movements within the confines of the car, but she had paid no attention. She shared his restlessness, she thought irritably, but it was childish to try to relieve it by going out into that oven.

Pick hung a small hammer on his belt and left her. She watched him on a screen as he examined the rock wall that made up one side of the protected spot they were in. Pick, she thought, of course; he was a trained geologist. She kept forgetting that. The riches of the coast lands had made his work unprofitable. The Board had cut off his funds, and finally he had given it up to be a guide, work for Ch'ien Li. She had read his background material in Jolly's hotel, ages ago. With a start she realized that she had been with Ch'ien Li and Pick for nearly eight months. How disappointed Jolly must have been when she had not reappeared, hat in hand to beg for the job she had scorned.

She stiffened, watching the console. Something new was happening finally. The foxes were stopping. Here and there some had found places where they could sit or crouch safely, and they were not moving. Others were still searching, climbing, and when new ones found roosts, they stopped.

Irina hesitated. Ch'ien Li would want to know, but if she didn't rest, she might have another attack, and so far, it seemed pointless to rouse her, at least until all the foxes had come to a halt. Most of them were still in motion.

Irina checked the sensors to make certain nothing was being left out of the record, and then she went out to tell Pick. To her surprise the heat was not as intense here as it had been down lower. The screaming winds sucked air from the crevice, and the updraft was dry and steady enough to act like a natural fan, evaporating perspiration as it formed, cooling the skin, although the air was many degrees hotter than the skin it cooled.

She told Pick of the new activity and together they went to the end of the cul-de-sac that protected them and watched the foxes. Only one continued to climb now, the old neuter, as the rest settled themselves on niches and ledges. When finally only the small figure of the neuter still moved, Irina returned to the car to awaken Ch'ien Li.

Now the three of them stood outside to watch the neuter make the final ascent of the mountain. They were high among pinnacles and peaks here, and the last climb was almost straight up a basalt spire that tapered as sharply as a church steeple.

Above everything the wind shrieked; more and more gasbags flashed by, caught by the strong rush of wind, carried out of sight within seconds.

No one moved or spoke as they watched the neuter struggle upward. At times it seemed the wind would whip the small figure away, fling it up into the sky out of sight, but the fox clung to the rock and gained an inch, another inch, then another . . .

A gasbag came in lower than the others; as it was swept past the peak, it whipped out a tentacle and caught hold, and at the same moment the bag deflated. It streamed up and away from the peak like a pennant, but now the creature was anchored securely. The neuter continued its laborious climb, evidently unaware of the gasbag above it.

Irina heard Pick cursing in a low savage voice. "Not now you bastard."

Often in the lowlands a gasbag lifted a fox, carried it up hundreds of feet, a thousand feet, and then dropped it, and the fox glided to land in a long sweeping joy ride.

Irina's hands clenched at her sides. *Not now,* she echoed. The fox climbed, it was within an arm's length of the tentacles. Suddenly in a blur of flailing limbs and whipping tentacles the gasbag seized the fox and released its own hold on the jagged rock. Its bag was instantly inflated and it was swept up and out of sight.

In stunned silence the three humans stared at the barren peak, then at the foxes huddled on ledges, on boulders, in niches; the foxes sat as if stunned also. There was no movement anywhere except that of the furious wind, and the sweep of a gasbag as it flashed into and out of sight over their heads.

Finally Ch'ien Li turned and began to make her way back to the car, her head bowed, her shoulders sagging. Irina looked from her to Pick who was staring at the empty peak. She followed Ch'ien Li.

Inside the car Ch'ien Li sat down and looked blankly at the floor. Irina glanced at the console, then looked harder, frowning.

The tagged fox was still registering, still rising in the air high over the mountain, but even as she watched, the dot of light was spreading, becoming a haze instead of the star-like point it had been.

"Look!" she cried then. "What's happening to it?"

Ch'ien Li came to her side and together they watched the haze take shape, the shape of a gasbag. Irina pressed Pick's signal button, and presently he stood beside the two women and they watched the globular haze expand. Other sensors were still focused on the foxes waiting on their ledges and perches. Simultaneously they all stood up and turned their muzzles toward the sky with their eyes shut.

The globe continued to grow until suddenly it erupted like a skyrocket sending streaks of light in all directions. Then it was all gone, the screen was blank.

Now the foxes moved. They began to leave the mountain top.

Irina sat down hard, and when she looked around, Ch'ien Li and Pick were also seated. No one spoke. The foxes were moving out of range of the sensors Pick and Irina had placed outside; one screen after another was left with only rocks and blowing sand to show where they had been.

Pick left to collect the sensors. When he returned neither of the women had moved.

"Going down will be easier than coming up," he said.

"Not yet," Ch'ien Li said. "We can find them later. They will rest as soon as they reach their last camp."

The remaining screen with a fox in view went blank. Pick turned off all the consoles, looked at Irina, then at Ch'ien Li who stood up and went outside. Irina began to replay the final episode of the agonizing saga in such slow motion that she could see the fox blink its eyes against the wind.

She watched the fox reach out, watched it close its eyes as soon as it was securely held by the tentacle. The fox was drawn upward; it vanished inside the gasbag, and the bag whisked out of sight. Again. Frowning, she played through another tape, this time one that showed the sky with the other gasbags flashing in and out of range. They glowed deeper and deeper, their colors intensifying. This tape did not show the starburst effect, but it was evident when it happened. The gasbags within range pulsed wildly for a few seconds, then streamed away. Irina played it over again. Satisfied finally, she went outside and joined Ch'ien Li at the end of the cul-de-sac.

"The fox went deliberately," she said.

"I know."

"It wasn't dangling, not the way they usually do when the gasbags take them up for a ride. It was eaten, or absorbed, or something."

Ch'ien Li nodded, as if she had known that also.

"That's what they came up here for, wasn't it? For a . . . a sacrifice."

"For what purpose?" the old woman murmured. "Always there is purpose behind a sacrifice. To make crops grow, to quiet a volcano, to still the storms. For what purpose?"

"I don't know," Irina said. "We don't know enough. Why did the other gasbags come? What did the rest of them get out of it? Why didn't they all grab a fox? They were waiting, just as the other foxes were waiting. Then they all went away, just like the foxes."

"What do you mean?"

"You have to look at the tapes," Irina said helplessly. "I don't even know if it could mean anything."

"But you intuit that it does. Yes. We shall look at the tapes again."

"It doesn't mean a damn thing!" Pick yelled. "Tell her it doesn't mean anything and let's get out of here."

Irina shook her head. They were all outside where Ch'ien Li was pacing slowly, ten paces, turn at the rock wall, ten paces. One hand cradled the other behind her back; her head was bowed in thought.

"She's sick. She made me promise not to tell you, but she's really sick," he said. "You can talk her into leaving." When she did not respond, he jerked her around. "Do it, or I'll haul her inside like a load of laundry and strap her down and take off. Tell her we're out of water, that you're sick, anything.''

''She won't go. She doesn't have time to start over, don't you see? So close, to come this close . . .''

''It was a goddamn failure! That creature is dead! There's nothing up here for her now.'' He began to shake her.

He was very frightened, she realized. ''You *do* understand,'' she cried softly. ''You know she can't leave here yet.''

''I understand, all right,'' he said savagely. ''You want her to die! You've hated all this, her, this project. You made it clear enough. When she's gone, you'll be able to go over to Kuwait or Corum. That's what you've been after from the start. Only you won't get it this way!''

She wrenched away from him and he followed, his face close to her. ''You can't deny how you've hated her!''

She shook her head. Hated? Loved? Both, neither. They did not apply. Words had become useless. There was nothing she could say to Pick, nothing she could say to Ch'ien Li, nothing she could say to herself that would make any sense of what she knew.

''Do you know what her name means?'' she whispered. Pick looked startled and wary. ''It means The Creative, and Fire. That's what she is, that's how she comes to understand everything. Fire that consumes and destroys and illuminates and permits the creative to erupt like a sun. She chose her name when she returned to China as a student. She knew the cost and the danger. You can't take it away from her now. No one can.'' She turned away from him and watched Ch'ien Li, pacing ten paces, back, again and again.

Pick brought tea to Irina later, and took another cup to Ch'ien Li who seemed unaware of him until he touched her arm, and then she staggered slightly. He led her to a rock where she sat down, accepted the tea, sipped it. He kneeled by her, speaking earnestly, his voice inaudible to Irina. He returned alone, Ch'ien Li still seated on the rock, her tea beside her, forgotten.

Hours passed. Irina and Pick sat on the ground side by side, watching the old woman who had resumed pacing. How could she keep it up? Irina thought dully. She should have collapsed. Where did she get the strength to move her muscles? to keep blood pumping?

Irina realized she must have slept without closing her eyes or slumping. She felt disoriented and for a moment could not think where she was or why. With a start, she realized that Ch'ien Li was no longer there. She jerked, and beside her Pick roused.

''What . . . ?'' He pulled himself up, dragging her up also.

''Look!''

Ch'ien Li was climbing the wall at the far end. Already the wind was whipping at her, molding her clothes to her body. She paused halfway up the wall and rested, her forehead pressed against the rocks. She was not wearing her face mask. She resumed the climb.

Above her was a ledge with another ascent beyond it. It was very narrow with only enough space to stand, none to move about in. When Ch'ien Li reached it, she crouched as if to catch her breath, to rest again. Maybe she had had another attack, Irina thought and involuntarily moved toward her. Pick caught her hand in a hard, unyielding grip. Neither moved again.

One of Ch'ien Li's braids had come loose in the wind and was snapping about her face, unwinding. Slowly she got to her feet; she had to move to one side to cling to a jutting column.

A gasbag flashed into view, snapped out a tentacle and caught the same rock Ch'ien Li clung to. For an instant Ch'ien Li did not move, then she reached out her free hand, and a tentacle caught it; another wound about her waist. She released her hold; that hand was taken and she was lifted. The bag inflated, rose so fast it was an iridescent blur.

Irina closed her eyes against a blinding flash even though she knew it had no outside source. She was rising, rising, and now she could see two small figures dwindling below her, dwarfed by the peaks and boulders, lost among them. Her head was swelling, growing; every event of her . . . a life was accessible, identified, sorted, experienced. There was a surging sea, and there was a frozen wasteland, and a panorama of forests and swamps. There were constellations and flares and comets and meteorites, and there were singing lights that swelled into a chrous, climaxed on an impossible note, faded; there were other ways of thinking . . .

She lived a lifetime, many lifetimes, and all the while her head grew larger and larger, filled now with pain that was pleasure beyond endurance. Everything became brighter until that too was beyond endurance. All she had known of joy, every thrill she had known with her body, had known with her mind, faded to insignificance as this new union, this new kind of coupling, reached its climax. When she flew apart, each part was the whole, each was complete.

Irina became aware that she was on the ground, drawn into a tight foetal ball. She moved cautiously, drew her legs out from under her, sat up.

Pick was starting to move; he too had drawn into a ball on the ground. He stood, looking around, his face half hidden behind his mask. He reached a hand toward her and she took it. Both hands were trembling.

They went back to the aircar without speaking, hand in hand. Silently Pick did the checkouts before liftoff. Like the foxes, like the gasbags, they were ready to leave; there was nothing else for them here.

With her mind's eye Irina glimpsed an image of a plain broken with rocks, clumps of low growth, some hills in the far distance, and beyond them mountains blending into haze. Across them, not perceived but calling, was the goal. She felt herself stretch out to reach it, and that line binding her to her goal was the path. It was hers, the way would follow. She knew both the image and thought were Ch'ien Li's, but also hers now. The image yielded, moved aside when she willed it. There were other images, alien images, that needed examination, but later. She smiled as she thought of the gasbags trying to make sense of the new images they suddenly had acquired.

They lifted and were buffeted by the wind instantly. A gasbag sped by. ''I wonder if we could tag one of them,'' Irina said. Pick laughed, and she laughed also.

''Remember what happened to Jolly,'' he said.

''That was different. He didn't know, wasn't ready.''

''I'm not ready yet, either,'' Pick said easily. The car lurched in an eddy and when he regained control he was whistling softly. Irina relaxed. She would write Ch'ien Li's biography, of course, correct in every detail. If she made a mistake, Pick would correct it. She could almost see the years as mileposts along the line that stretched across the unmarked plain.

They would tag more foxes and follow them, and the next time there was a ceremonial procession to the mountain top, they would be ready, they would participate. A smile kept forming itself on her lips and when she glanced at Pick, he was smiling also.

WHY DOLPHINS DON'T BITE

Theodore Sturgeon

Dom Felix invented the Receiver. So say the almanacs. So say the encyclopediae, the infobanks, the children learning.

Dom Felix invented the Receiver. Dom Felix was not educated in the theory, nor trained in the technology, nor temperamentally suited to such an endeavor, but he did indeed accomplish the greatest single upward, outward leap for his species since the taming of fire.

Dom Felix invented the Receiver, not because he was inspired, but because he was terrified; not because he had achieved wisdom, but because he had to confront the truth and could not. Therefore it was obsession which brought about the Receiver—obsession and terror.

The accepted version is that Dom Felix brought the Receiver from Earth. This is not true; it was developed on Medea more than three terrayears after he was defrosted there. He brought something, sure enough. He brought news of the Great Acceptance, that strange admixture of philosophy, religion and logic (though it was really none of these) which had so drastically changed the face of the earth. Had it been a religion, Dom Felix might have been termed a missionary. Had it been a philosophy, he would have come as a teacher. Had its logic been pure, he might never have come at all. Nevertheless, he came, filled with the wonder of the success of his credo, eager to bring it to another world.

"Defrosting" is a word, and "Receiver" is a word; the Receiver is an ultrachron (some say "transchron") transceiver. Humanity has always encapsulated its pivotal discoveries within a word, at one time or another. The Pill. The Church. The Bomb. The Trip. Cryogenics had nothing to do with space flight, the detection of the bioenergetic aura and the subsequent development of the phase-inversion field having become operable before freezing was even tried for the purpose; yet "defrosted" was still the name of the process by which the field was shut off and the activity of every single one of the passenger's organs (and biochemical reactions, and bacilli, and viruses) could resume precisely where it had ceased fifty-one terrayears earlier, and he or she could know The Trip was over.

''—four, three, two, one,'' Dom Felix mumbled obediently, finishing the countdown he had begun half a century earlier, and then he inhaled, and coughed at the strident edge of this different air, and ''Oh?'' at the realization that his naked body, suited in fever-heat and yet chilled, was being deftly covered by another and his face buried in a mass of honey-colored hair that smelt of sea-spray and almonds and *''Oh!''* as he felt a sensation which (by his own determined choice) he had never known before. There was then a long series of undulations against which, in his present condition, he had no defenses, until, with an unspellable syllable which hurt his throat, he experienced an internal explosion which left him two-thirds unconscious with his eyes screwed shut. He was remotely aware of the other body's weight leaving his, and ''Oh!'' (indignantly) as he opened his eyes and saw a nude female deftly plucking a sheath from his most private apostrophe. She caught his eye and smiled. ''Welcome to Medea,'' she said, and left.

Dom Felix shook his head in denial of this reality, and in the process saw that there was a tall, bearded man, dressed in a waxy-looking short tunic, standing by his bed. The man had a voice like a tuba. He said, ''Welcome indeed, Dom Felix.''

Dom Felix raised his head to look in the direction of the vanished woman. ''Who was that?''

''That? That's Wallich, about the best wide-spectrum technician there is. Nothing but the best for you, you know.''

''Damn it,'' said Dom Felix, surly. He ran over the big man's words in his mind, trying to make sense out of the outlandish accent. ''Damn it, I'm celibate.''

''Not now, you're not,'' said the man cheerfully. ''My name is Altair Two. 'Two' spelt archaically with two I's. To differentiate me from my father, who was Altair Junior, to differentiate *him* from *his* father, who was just plain Altair. So although there have been three of us, I'm called 'Two'. What's the matter?''

Dom Felix looked down at himself and made a vague gesture. ''I feel self-conscious, lying here like this.'' He was a short, broad man with thick black brows over what seemed to be pupil-less black eyes, a short thick beard, short thick fingers and legs and a lot of hair on his body.

''Never thought. Sorry,'' said Altair, and crossing his arms downward, grabbed the hem of his tunic and whipped it off over his head, whereupon the woman Wallich entered. She was dressed. A bit.

''Oh God,'' said Dom Felix. He sat up protectively. It made his head swim and he could feel the blood draining from his face. ''Easy,'' said

Wallich; she was by his side in one swift stride, holding him competently by one shoulder and the small of his back.

"I think the clothing thing has turned around again," said Altair.

"Oh, sorry," said Wallich, releasing his shoulder and darting her hand to the clasp on her own. Dom Felix managed to catch her wrist. "Please, no. Just get me my clothes."

"Right here," said Altair. He lifted a stowage case marked FELIX to a small table and tapped a silver patch on the side. The top sprang open and he lifted out a heavy mass of black fabric. "Trip in here not three years ago, everybody covered from ankles to nose, screamed when they saw what we wear here. 'Course, that was a slow ship, almost 80 terrayears. The one before that, we couldn't keep clothes on 'em. They felt it was dishonest. Even out at the Rim, they'd rather freeze than be dishonest."

"Please," said Dom Felix, holding out his hand for the garment. He swung his feet over the side of the bed and again felt the rush of faintness. Wallich put her arms firmly around him. When he could, he disengaged them. "I'm all right. *Please*."

"That clothes thing," said Altair, absently turning the heavy garment over and around, evidently trying to find the most convenient way to hand the thing to Dom Felix. "The pendulum swings, all through history, but it doesn't swing straight and the frequency varies. Certain times and places, it was immoral to display feet. Other places, knees. Faces. Genitals. Belly-buttons. Buttocks. And combinations thereof. I have a theory: the human race is innately disinterested in sex, the more so the nakeder they get. So when they find the libido starting to atrophy, they begin decorating the sexual emblems and pretty soon cover them up, which is a very good way to put sex under forced draft. Weren't for that, the species would've died out long ago. What we are, what we've always been, is cripples. We got our rut cycles amputated, we have the clothes thing instead."

Dom Felix blew out through his nostrils and started to rise. Wallich said, "Altair, stop chuntering and give it to him; he's not ready to walk yet."

"Oh, sorry." Altair handed it over and Dom Felix found a hem and pulled the thing on over his head. He stood up and, with Wallich's deft assistance, got his arms through the sleeves and let the garment fall around him. It was a heavy black burnoose which came halfway down his shins. He sat back, trembling, and made himself raise the hood and draw it over his head. With the beard beneath and the shadows above, his face retreated into a dark cave, from which, astonishingly, his black-on-black eyes glowed brightly. "That's better."

"Put yours on too, Altair."

"Huh? Oh. Oh, yes." Altair scooped up his tunic and donned it. He gestured at the burnoose. "That thing'll be great for Circle Three on out, but it'll smother you in here."

"Surely that's not all you wear on Medea."

"What you wear on Medea depends on where you are on Medea. Medea has everything, all the time—cold, hot, wind, wet, dry, desert, mud and super-mud. Here, where we are, this is Pellucidar. Center of the Earth. Ancient term derived from the days when Terrans lived in burrows and ate rice. This section is central to Earth Main, which is the middle building of this colony, which is called Argoview, which is the dumbest name of any of the Terran enclaves, because the only places there can be an enclave on this crazy blob are places where you can view Argo. So: Air, light, humidity in Pellucidar are as near Earth average-normal as we can get it. It's positive-pressure like a 'clean-room'—any airflow is outward from here so it stays the way it is. Then there are five concentric segments where the air is increasingly mixed with Medean air; you move out at your own pace until you get used to it. When you get used to it and come back in here you find the lights too bright and the air too thin and the oxy mix making you a little ding-y."

"It shows," said Wallich, not unkindly. To Dom Felix she said, "You stay here and talk to Altair, and relax. Please—relax. Your body has been through a lot and your head doesn't know it yet, not really. I've got to see how your fellow passenger is getting along." She waved and left.

"Oh god, Kert Row," said Dom Felix.

Altair raised an eyebrow. "Is that Acceptance?" he asked good-naturedly.

"Has nothing to do with Acceptance," Dom Felix said testily. "Kert Row is an agricultural expert sent out here with new hardware dreamed up according to new theories by Occam, and for two and a half weeks during prep. he did nothing but talk to me about the theories and the hardware. It happens that I have no understanding and no talent in either area. I wish I had. If I showed irritation then, it was at myself."

Altair came over and sat down next to him. "You know, I like you," he said candidly. "Most people—'specially Trippers, trying to make a heavy impression—go all out to hide what they're not good at. You come right out with it."

"Well—thanks. Thank you." Somewhere in that portable dark, the shadowed face showed that it was moved.

"And you're not stupid. Fifty-one percent of smart is knowing what you are dumb at. An old financier named Brentwood said that."

Dom Felix was now close to embarrassment. "Go on with what you were saying before."

"Oh yes. Pellucidar. Clothes. We wear what we please, or nothing if we feel like it. Why should we? controlled environment . . . and anyway, like it or not, the skin is the largest organ of the body and it needs light and it needs to breathe, and it never was meant to be covered up all the time. We grab as much light and this air as we can, when we can—there's damn little light and far too much of the other out there."

''That's too bad,'' said Dom Felix.

''What's too bad?''

''Sorry. Thinking aloud. About what I have to do here. Pass it, please.''

''No, tell me about what you're going to do—Acceptance, all that.''

''Well—how much do you know?''

''Not too much. What I've learned, I like. From what I hear, it's changed the face of the Earth. Nations don't fight with nations, even brothers don't fight with sisters. A man about to cheat you in a game, or a deal, suddenly tells you so and plays it straight. A contractor never estimates the highest price he can get—just his cost plus a fair profit. A man running for election starts out by saying everything bad he ever did, and tells the voters what bad habits he has that he hasn't been able to break, before he says anything about how good he is. That right?''

''That's almost right. I mean, it's not 100% yet. But it's getting there. It *is* better than it's ever been, back there on Earth. There've been some bad times there, you know.''

''Sure I know. I didn't tell you—I'm a historian. An historian, if you're a purist in the Old Tongue. What that means is I read a lot, think a lot, see what of what I read and think applies to where we are and where we're going, and pontificate about it. Out here we study Old Earth probably a lot more than the homebodies. It keeps us together.''

''And yet you've sent for me.''

''Oh, that. Well yes, God knows we need you. We're about split in two—if we're not already. Two and a third, maybe. It's the Gengies, you see.''

''Gengies?''

''Genetic Engineered. They like to call themselves Truforms. They're all Medea-born—if you can call making them 'born'. They're, well, *produced.* If we need a super-genius math type, or a guy *this* wide and only *this* high to work in the mines, we make one, that's all. Not that we ever go too far away from the norm, because they may have a specialty but they have to live with us.''

'' 'Us.' 'Them.' ''

''Well, damn it, there *is* a difference. We're Naturals—Nats, we call ourselves. We let God choose the genes, yes, and love. That's the way it's always been, that's what made us two-legged critters what we are. Now they come along and act as if they're *better* than us!''

''Are they?''

''Wherever we design them to be—sure. Their specialties—they're tops. Why not? But do you think they're grateful? No way! Look, they try to reason it both ways. They're superior because they're good at what they were designed for. And they're deprived because we have a history, an ancient homeland, racial memory, and they haven't. They're better than us—and they're deprived. They can't have it both ways—but they want it both ways. And there's going to be trouble. Big trouble, and Medea isn't big enough for trouble like that. Well, Medea is, but the Terran Conclaves are not. There's talk of the Gengies driving us out."

"Out where?"

"Out there. It's real hell out there, Dom Felix."

"Who talks of the Gengies driving you out?"

"Well, everybody."

"Who, everybody? Are the Gengies telling you that?"

"They aren't telling us anything!"

"Ah. So it's you Nats who are telling each other that."

"Well, it figures."

"Does it." Dom Felix paused. "Tell me something. Do they like to be called Gengies?"

"Oh man, you'd better not. Not to their face."

"Mm. And what do they call you among themselves?"

Dom Felix thought the man colored. When the answer seemed too long in coming, Dom Felix turned wordlessly toward him and waited again. At last Altair said in a low voice, "Vaj."

"What?"

"Singular, Vaj. Plural, Vags. It means 'vagina'—vagina-born. And a lot is in how they say it, too. There've been some pretty bad fights."

"I can imagine. . . . What's this third party you mentioned?"

"Oh, them. They're Mules."

"Mules?"

"Once in a long while a Nat gets a Gengie pregnant. Though not me, they make me nervous. And the other way 'round too. And usually if a baby gets born, it grows up sterile. Well, you've heard of that before, if you know any biology. Take a lion and a tiger—big cats, same diet, pretty much the same habits. They won't breed. If you try it under laboratory conditions, you might make it once in twenty tries. And if you don't get a still-birth, you'll get a mule."

"Yes, I know that. It's the very definition of species. One of the basic tenets of Acceptance is the simple scientific fact that there is no form of humanity on Earth which cannot breed readily with any other. Never mind should, never mind might—they *can*. Once you grasp that, you begin to understand man as what he is—a single species."

"And what we have here," said Altair, "is a different species, and that's all we're saying."

"You still get Mules, though, and that means you're still very, very close. Tell me—what do the Mules think?"

"That's what we don't really know. . . . Dom Felix, do you know what a 'swing vote' is in an old-time election?"

"That's when a small party has enough votes, in a close election, to decide which of the big ones will win—although they themselves have to lose.''

''I like you better all the time,'' Altair said warmly. ''Well, that's the situation with the Mules. There's no saying where they'll throw their weight. I'll tell you this about them, though—in brains, in work, they vary from excellent all the way down to good.''

''That's the nicest thing you've said about me all day,'' said Wallich from the doorway, in a dangerously sweet voice. ''Dom Felix, I'm one of those Mules. Hee haw, and all that.''

''Oh Lord, Wally, I, I didn't, I mean I—'' Altair turned almost frantically to Dom Felix. ''Listen, there stands the best synthesizing technician in all Medea. There is nobody like her—nobody. Chemistry, biochemistry, physiotherapy, psychotherapy, she can run any piece of equipment in the place, yes, she can *fix* any piece of equipment. That's what I was just telling him, Wally!''

''I'm so pleased,'' she said steadily, and there were tears in her eyes. ''Now tell him that I have ears as good as yours, feelings as tender as yours, and I can hurt just as much as a *real person*.'' And she turned quietly and left.

Altair sprang to his feet. ''Man, I did indeed blast it good. I better go and—''

With a cold sternness Altair had not yet seen, Dom Felix pointed to the bed beside him. ''You'd better sit right down again.'' A moment of confusion, then Altair came and sat. More gently, Dom Felix said, ''It won't do a bit of good to chase after her now, if I'm any judge, and I am. Later will do, and I'll help if I can—and I can.

''Now: You've been almost embarrassing in expressing your liking for me. I'm going to embarrass you twice. One: I like you. I like you very much. I think you're super-bright and I think your instincts are in the right place and I think you're basically honest. Two: I think your long view of human affairs has preoccupied you so much that you've lost your link to the short view—here, now, Medea. You told me that your function here was to apply that link, and I am telling you that you are not doing it, and that therefore you are not doing your job.''

''Now wait a—''

''It's testing time, Mister Historian, and I'm glad that's your specialty and that I can speak to it and that I can make my point simply and quickly without sidling up to it. Do you know what a Catharist was?''

''Well, I—''

''A Huguenot, a Jacobite?''

Altair nodded. ''The Huguenots were—''

Implacably, Dom Felix drove on: ''Waldenses, Adamites, Irgun Zwei Leumi, Mormons, Mau Mau, Pied Noir, the Confederacy, Symbionese, Freets Raiders, Sans-Culottes, the Polar Gang, the I.R.A., the Anzac Hangmen, the P.L.O.?''

''Most of those. A lot of them, anyway. The Polar—''

Overriding, Dom Felix demanded, ''What were the issues in the Thirty Years' War? Why the story that men and women were hanged for wearing the color green? Did you know that men were flogged and churches burned because they did or did not have candles on the altar? Why would a man be hunted down and speared like a boar because he had been seen raising his wine glass over a glass of water? What were the issues? What were the issues?''

''Well, in the case of—''

''Ah! You know. *You* know, because you are Mister Historian. But suppose you are not Mister Historian. You are a modern Terran with a good education and a fine background, and I say to you, Catharists. I say, Waldenses. I say, what are the issues?''

''I—I guess I'd have to say—I don't know. I'd have to say, I'll look it up.''

''But if I say, modern Terran, does it matter what the issues are? Does it really matter to *you*?''

''Well, I guess not. Not now.''

''Aha. Now we have it. *Not now.* Altair Two, I submit to you, looking down the long sweep of history, it did not matter *then,* those things for which people fought and died and were imprisoned and tortured and burned; that in the deepest sense it did not matter if a man turned his face toward Mecca or Rome or Canterbury or stood alone on a rock on a mountain and poured prayer on the rising sun, or paid his tithes to this or that emperor. Yes of course, it was made to matter to the man; but in the larger sense the issues were issues which had no real significance. I read a story about a man who traced back through three centuries of warfare and killing to find the basic issue, and it turned out to be a quarrel over the king's breakfast as to whether one should break a boiled egg on the big end or the little end.''

''That was, ah, Dean Swift. *Tolliver's Travels.*''

''Thank you; I'd forgotten. And I submit to you now that your splits here on Medea, with your Nats and Mules and Vags and Truforms are of the same category, and do . . . not . . . *matter*!''

They sat glaring at each other for a moment, Dom Felix less and less as the moment passed, Altair II more and more until he exploded:

''By God it *does* matter! Do you think we can run the risk of the Geng—ah, Truforms' breeding at random—one with superior size and another with a superior logic, a double-dominant and a brat who would grow up to be something we couldn't handle? Do you think we want to repeat the mistake of the Computer Wars, when men had to obey the commands of their own creations? Damn it, Dom Felix, the only reason the issues you just reeled off—oh hell, man, you do know your history!—is that those issues were settled—fought and won and done with, and that's why they don't matter. This one is here and now and we will fight, we will bleed, *I* will bleed and it's got to be stopped! Then in another thousand years you can look back and say, only a specialist can even remember what the issues were. But you can't say it now."

"I can say it now and I do. The issues are what they have always been when men turn on one another. You have the power and I want it. I have the power and you must obey. I will kill you if you do not give me the power. I will kill you if you threaten to take my power away. It is *that* that does not matter; it is *that* which is the triviality."

"Well if you think we're going to knuckle under to a bunch of—of—why, they're not even *human*!"

"Altair, *my* history book says that from time to time the Visigoths were not human, the Japanese, the Jews, the Germans, the Irish, the New Jibaros, the—"

"Propaganda talk, Dom Felix," Altair interrupted tiredly. "But this one time they really *are not human*!"

"And I too really are not human."

The voice behind them was metallic and not quite a monotone, and synchronized with it was a series of soft grunts, whistles and squeaks, all but inaudible. Dom Felix whirled around and gasped. Altair whirled around—and laughed.

Squatting against the back wall was the strangest—animal? Creature? Being? Monster?—that Dom Felix had ever seen. It rose as they turned; it was taller than he, though not as tall as Altair. It was covered in gray-blue fur, with large upthrust triangular ears, clawed feet with slender ankles and extremely massive thighs, shaped rather like those of a wolf, but obviously jointed to what must be something very like a human pelvis, for it could stand upright with the legs almost straight. The arms were long and slender and seemed to be muscled with knotted steel cable. What at first seemed to be a decoration or even a kind of garment proved to be an inordinately long tail, wound diagonally around the torso upward from its base, just over the small pot-belly, and on around and around until its pointed bony tip rested in the area of what would be, in a human, the clavicle. Hooked around the neck was a padded metal band bearing a small grille and a slender curved wire, terminating in a knob the size of a thumbnail, which hovered a few centimeters from the mouth—or was snout a better term? A purplish tongue flicked out and in, and enabled Dom Felix to see a flash of blue-white teeth, clearly those of an omnivore, with blunted canines and very even, manifestly sharp incisors. The most fascinating feature to Dom Felix was the hands, which bore two two-jointed opposable digits and two very long fingers with small curved claws, and in the palms, a protruding chitinous pair of nippers, or beaks, shaped rather like a parrot's but more slender. As the two men rose and turned it was striking and scraping the two sets of nippers together, making a dry, high-pitched chirping sound.

''Laughing,'' said Altair aside to Dom Felix, briefly imitating with his own hands the movement of the creature's. ''That's the way he laughs.'' Aloud, he cried: ''Aquare, you ol' long-tailed hoptoad—I'm glad you blew in! This is Dom Felix here at last—he just Tripped down. Dom Felix, this is my oldest friend on Medea. Really. He used to bounce me in his arms while my Mom was working in the labs.''

The long thin lips quivered and moved; the strange sequence of whistles and clicks emerged softly while the little metal grille said ''Please be welcome and the happiest, Dom Felix. We have spoken much of you and how you have saved the Terra.''

''I have heard a great deal about you too—you are quite a celebrity on Terra, you know. And please—I have not saved the Earth, not at all. I think the Movement I work in has done a great deal of good, it was doing it before I joined, and all I am doing is to try to return the good it has done me.''

''Ah please lengthen yourself.''

Dom Felix turned a puzzled face to Altair, who laughed and said, ''He means, essentially, don't be modest. Ask him how old he is.''

''What?''

''Go ahead.''

''Aquare, would you mind telling me how old you are?''

Chirp-chirp-chirp. ''I have achieved my maturity.''

Altair said, ''You know, according to the records, that is precisely the answer he gave more than *eighty* terrayears ago? Ask him why he is the only Arcan (that's his city, Arca)—the only one who has ever learned our language.''

''Why is that, Aquare?''

''There is no need.''

Altair said, ''That's from eighty years ago too. Years before that he showed up at the enclave—when it was nothing but a dome and a few fields. He just hung around all the time, didn't want food, didn't want anything. Security got very uptight at first but thank the powers we had a Big Chief with the wit not to blast him. Just a tight guard and observers. One day one of 'em, a bright Gen—— ah, Truform called Zylo, noticed those noises he was making and claimed to recognize words. A whole team got to work on it and designed the first version of that computer-translator he's wearing. It's been improved a lot since then. And he's been a great help. He's arranged a dozen or more tours to Arca over the years, though not much any more—nothing changes over there. But we learned the design of the winghouses from that, and how to build the way they do. You'll see for yourself when you start to move around.''

While he spoke, the Medean stood quite motionless, head turned to one side. Dom Felix realized suddenly that he did not have binocular vision. Like a rabbit or a squirrel or most Terran birds, the averted head meant Aquare was looking straight at him. Altair was saying, "Neither Aquare nor any other Arcan ever asked or took a thing from us. Even when our engineers thought they had a better way to do something, or some device or gadget to give to them that they might use, the Arcans just looked at it and walked off, and old Aquare here just wouldn't say why. 'We are content,' " he mimicked, and the Medean went *chirp-chirp-chirp*. "And what the hell; we're just not in competition. There's plenty of room, we never built near Arca or any fishing or hunting ground we thought they might use; we can't eat the same food; there's just no reason for any friction. So as time went on Aquare became free to come and go any time. He stays out of the way; he has a real instinct for that; and he never goes into restricted areas or anywhere where he might hurt himself. He'll talk to you for as long as you like, any time, and never gets miffed if you have to cut it short. He'll answer any question—almost—and I just can't remember his ever asking one."

"Doesn't he mind our sort of talking about him behind his back to his face like this?"

"Say no say no," said the strange mixed voice. "I am a very pleasant conversation."

"Another Terran Tripped down with Dom Felix, Aquare. Would you like to meet him?"

"He is Kert Row. I have meet him. He and machines and theories all happy harmony together. I do not think they harmony with Medea. I do not say him that. I wish he happy until rested. Time then find out."

Altair groaned. "Here we go again. It's that damn Occam. Such a great idea in theory—a projective computer which will give you the simplest possible solution using all the data, because according to Occam's Razor the simplest solutions have the greatest possibility of being right. But how do you tell Occam that problems on Medea are not simple, solutions that work are never simple, and anyway, there's no way to feed it all the data?"

"It's been pretty good at cutting transmission time from Earth to Medea, though, receiving laser as long as the trip is in range, computing probable outcomes, and beaming those ahead. That's what brought me here at this time instead of maybe forty years later."

"That is a truly horrible thought," said Altair. To the Medean he said, "Dom Felix is going to solve all our problems for us."

"Going to try," said Dom Felix, feeling a suspicion that the cheerful historian might have a touch of vicious irony in him.

"I hear him solving," said Aquare. "Waldenses, Adamites, Irgun Zwei Leumi." A pause. "Altair Two, you put you ear far down in mouth of Dom Felix. Leave there." Pause again. "Could be Dom Felix is very great.

Or very very great. Or the greatest Terran yet on Terra. On Medea. Soon I will know."

Blushing like a schoolgirl, Dom Felix said, "I really don't think I'm so great, Aquare."

"True. True. But could be. Soon I will know."

"I really don't know what to say," murmured Dom Felix sincerely.

"Say you sleep now. You more tire than you know. Dream happy."

"Omigod yes!" cried Altair. "I shouldn't've kept you up, got you all stirred up . . ." He leapt up, swung Dom Felix around, and lowered him gently. Sleep approached with a rush, holding back just long enough for him to hear Aquare intone sagely:

"There is no should. There is only is."

Kert Row, tow-headed engineering genius, lay with his eyes open and started up when Altair came in. "Hi. Hey," he said, abruptly propping himself up on his elbow, "you know who that *is* in there?"

"Sure do. Dom Felix. And he just corked off, which is what you ought to be doing."

"I don't mean just his name. Do you know who he *is*?"

"Fill me in. It's hard to know when Occam leaves off on facts and fades in the projections. The projections are pretty impressive, though."

"I haven't heard them," said the engineer, "but sight unseen, I am here to tell you they don't do that man justice. You just don't know what happens when that man turns on . . . whatever-you-call-it that he turns on." He laughed. "Words just don't do it, see. Look, I saw him put a hundred thousand people in a stadium into some sort of a, oh hell, I was going to say trance. It wasn't a trance. Trances, you wake up."

"He certainly spun my head around." Altair pursed his lips.

"I know what you mean," said Kert Row. (Altair doubted that.) "But you have to see him in action, with a crowd, I mean, before you can appreciate what happens when you're alone with him. After that stadium thing, when I found out I was going to prep. with him for two and a half weeks, I thought he was going to burn me to a crisp in the first twelve minutes. But you know what? The whole time he let me talk, he *wanted* me to talk, he really *listened*. I was the what-you-call, guru, he was the student."

"Well, he was. He told me that. He said he was angry at himself for having so little knowledge, so little talent in your field, and how he wished he had even some of what you had."

"He *did*? Oh . . . my . . ." The "my" came out despairingly, as if he had searched for expletives and found none that would suit, and had to fall back on something so pale. Altair hoped he would not actually ask if he had had the same experience with the man in the black burnoose, and his hope was realized; Kert Row fell very suddenly asleep with a luminous smile on his face. Altair did not know how long he stood there, tanning his heart with that smile.

"Oh."

He turned around. Wallich. One long stride, and he had her, upturned hands on her elbows. He said, "No more 'Mule', public or private. Ever."

Tears. There had been tears before, too, but what a difference! He had a mad thought that they must taste differently, angry tears and—and these. He slid his arms around her and she leaned there for a time. He raised his head then turned it toward the door, a quiet suggestion. She stood back and looked into his face, wide open and certain, and shook her head. "Not now, Altair. And . . . not for a very long time, but—thank you." She tiptoed to kiss him swiftly on the corner of the mouth and went out.

He glanced at the other door, the adjoining room where Dom Felix slept. *Little hairy man,* he thought, *you do move and shake things around here . . .*

In the weeks that followed (Terran weeks, of course, Medea stubbornly and reverently adhering to Old World time), Dom Felix visited, Dom Felix observed, Dom Felix questioned and listened and studied; he became as ubiquitous as the Arcan Aquare, appearing everywhere, anywhere, while staying out of the way.

He witnessed the departure of the lander which had brought him, and experienced the strange mixture of feelings experienced by all Trippers; it was unlike any other departure since first men travelled, boarded, entrained, emplaned, for there was no waving from the rail, no message from over a horizon, no Captain's Table, flight attendant—none of that. There were seventeen days of psychological and biological preparation, and then immersion in the bio-energetic phase-inversion field—all this planetside. Subjectively the Trip was instantaneous, objectively a half-century or so. Between these extremes of time, Occam the projective computer drank information until the well ran dry, soaked up by distance; did its extrapolations, and, when it could, sought and found its opposite number on the approaching ship (for launchings, few as they were, were timed to coincide going and coming, so that they might pass each other somewhere near Midpoint Turnover). As long as they could, they swapped and shared, and then turned their lasered cargoes on their destinations, so that when they arrived, all their news and knowledge was there before them; it was difficult to regard the Trippers as strangers. Only the destination was strange, and that only to the Tripper himself. Knowing all this, it was a quite indescribable emotional experience to watch the departure of a shuttle bound for its orbiting interplanetary—a launch which, if one Tripped again, one would not feel, a Trip which, from beginning to end, one would not truly experience, in a ship which one would never see. For all that, the launch yet represented the casting off, the burning of the bridge, the lost opportunity to take it all back, cancel the plans, go back home . . . and then, the impact which no amount of prep. could ever quite erase: *You can't go home again* (that poignant truth so often learned by any growing consciousness) multiplied immeasurably: home wasn't there any more. A true-time century would take care of that.

His acclimation took considerably less time than anyone had expected, and soon he was able to stay quite comfortably at the Rim, breathing 90% Medean air and becoming accustomed to Medea's strange and multi-shadowed light—what some forgotten technician with a poetic twist had called "thick light." He found, as had others before him, that his eyes, more and more, winced away from the blare of brilliance flooding the Terran agricompounds, finding comfort in the more muted tones of the land and the faintly luminous dull oranges of the estuary. The winged structures of the outbuildings fascinated him, for Earth had never seen the like; ultimately he would claim one of them as his own.

His preoccupation, of course, was people, the interaction of people with people, and between people and ideas. He won the confidence of the Big Chief, Director Kesseridge, a born administrator who was so good at his job that it was rumored he might be a Truform, made to order; so good at his job that he was bored with it, bored as only a man can be who has no alternative to that which he does well. Dom Felix was able to interest him in that facet of Acceptance which taught the ability to listen to a man being wrong without correcting him. It was hard to do, even to grasp, at first, but when he set out to practice it he found himself welcomed more and more in places and in situations he had never dared approach before. He thought this was a miracle and Dom Felix a magician, and thenceforward, all doors were open to the hairy little man in the black burnoose.

Dom Felix acquainted himself with all the Sections—Astronomy, Agriculture, Meteorology, Biochemistry, Radiology, Xenology, Bioenergetics, Ecology, and all the divisions of Life Support. Most often he was the student, the specialist the teachers; occasionally he displayed absolutely astonishing knowledge in one field or another. He had no intuitive grasp of mechanics or number, in its widest sense, but he was as fascinated as a wondering child at what they could do. He seemed (because it was genuinely so) ashamed of what he considered vast holes in his erudition, and his expression of it can only be called bold embarrassment—an immediate willingness to announce the fact that he did not know and that he could not grasp. It was most disarming and it made no enemies. And he began to distribute his sign.

Interest in it developed slowly. He did not force it, or sell it, or seem to attach much significance to it; he simply did it. Regarded at first as a mere quirk, it began to attract attention and then curiosity: when in a conversation would he make this sign, and did these occasions have anything in common? What was its purpose, and what did it mean? Speaking with someone, he would put out his hands, palms down, the left resting on the right, and raise them together almost to the level of his face, while slightly inclining his head. Then the hands would fall away and the talk would continue. Thought at first to be a gesture of greeting or of farewell—a kind of *sayonara*—it was gradually noticed to occur at neither of these events.

It was, in its quiet way, extraordinarily potent. The hands placed together and raised appeared to be defensive, to say "Stop!", but the inclined head turned it to a tribute, a concession: "You have a point there." One thing was certain: whatever provoked the gesture—intensity, passion, rudeness, that kind of positiveness once described as "being wrong at the top of your voice", or even simple inaccuracy—once the gesture was made, it ended with Dom Felix having the floor. It was one of the most ingenious stoppers ever devised, and the more its meaning was understood, the more potent it became.

The day Acceptance entered Medea was the day someone was moved to ask of the sign: "What does it mean when you do that?" Dom Felix smiled and answered, "It's a way of becoming." No more would he say about it for a long time.

The day Acceptance began to ferment in the enclave was the day someone thought to ask, "A way of becoming *what*?" And Dom Felix smiled and answered, "It's a way of becoming you."

He would discuss this, when asked, though he never forced it. He explained that when he used the sign, he suspended his own thought and even his own identity, and made a profound effort to *become* the other person—to see with his eyes, feel with his fingertips, think with all his method and mode, background and learning. So the gesture did indeed cry "Stop"—but not to the observer, conversant, opponent, but to Dom Felix himself. And the quality of obeisance was real, because for that moment the other was dominant. And the air of concession was real, for during that moment the other was as right, as authoritarian, as commanding as he felt himself to be.

The day Acceptance achieved full flow on Medea was the day one man used the sign on another—and neither was Dom Felix.

And the day Acceptance could acknowledge its victory was the day a Natural used the sign in talking to a Truform. Mission accomplished.

The mission was, of course, not accomplished in any single hour, for the concept had to soak in cell by cell, as bread takes up red wine. And like any battle won, it had then to be secured, and to this Dom Felix now turned his attention. During the time in which the raised hands were replacing the raised fist, Dom Felix worked toward the root cause of the rift between the Naturals and the Truforms. "It has to be simple," he told Altair. "All basic things are simple. Complicated things might be vital, they might make great literature and music and empires and human disasters, but if they are complicated they are by definition not basic." Altair spent a good deal of time with him, especially since Dom Felix had gently pointed out to him something he should have known, something that has sidled up on historians since the first troglodyte first grunted the tale of last month's contest with the timber wolf: history isn't only *then*, it's *now*. Dom Felix, in his turn, was delighted with the big man's growled and pithy comments. "Ye shall know the truth," he said one day, "and the truth shall make you frantic." "Mankind has never solved its problems. It has just substituted larger ones."

And Wallich; Wallich was invaluable to Dom Felix, because of her wide knowledge of so many technologies and their theoretical underpinnings. Her ability to make clear analogs between anything she knew well and anything else she observed was a knack so absent from Dom Felix that he carried a kind of vacuum in its place. Like all movers and shakers before him, he was an obsessive, and lacked the synthesist's ability to seek for the balance in things, to turn the coin over, to seek for parity when imbalance fell in his wished-for directions. Wallich had changed radically since his arrival, polite and efficient as always but intimate with no one. She made herself useful, close to essential, to Dom Felix while carrying on all her other responsibilities, and if this cost her recreation and sleep, she bore it well; no one knew.

The third favorite of Dom Felix was the young agricultural engineer who had Tripped out with him, Kert Row. True to Altair II's prediction, the hardware he had brought with him—automatic machinery to invert and neutralize the hormone poisons which made Terran crops and bacteria mutually lethal to those of Medea—were useless, and the theory it was based on, nonsense. Faced with facts, he made no effort to deny them, despite his years of labor in R&D of something the computers assured him would work, but which did not, but flung his energy and design genius into new problems, half a dozen of them, ranging from jet-cycle improvements (they say the level-deck stabilizer was his) and a new high-acceleration centrifuge, to mess-hall conveyors and a balanced-light easel for the Art section in Recreation. His grasp of physical principles was so clear and immediate that it was he, for example, rather than Aquare or any of the old hands, who was able to explain to Dom Felix the basic idea of an Arcan wing-structure, just by looking at one. All Terran buildings were designed this way now, dome-building having been all but abandoned. Medea's ferocious, unpredictable winds were capable of sweeping away almost any kind of surface structure, just as a hurricane-proof building will blow apart in a tornado. "By golly, they got wings!" exclaimed Kert Row the very first time he and Dom Felix looked out from the Rim of Pellucidar across the Terran compound. "Those buildings— You see? Wings. Airfoils!"

Dom Felix looked at the odd structures, puzzled. They were rooted to the ground, and they bristled with short thick shelves, as if a builder, assigned to apply eaves, had suffered an acute attack of surrealism and had stuck short pieces of eave all over the roof and walls. At Kert Row's command he watched them carefully, through the twirl and batter of the Medean gusts. The "wings" were trembling, becoming thick, then thin, twisting, warping. "How about that!" the engineer said admiringly. "How about damn well that!"

"I don't understand."

"Those buildings don't fight the wind—they use it! Watch that . . . there—do you see? You see what's happening? Those foils can sense wind direction and force, make one edge a leading edge and the other a trailing edge, and bulge the chord enough to give positive or negative lift, or . . . or . . . yes, see that? They can twist from the root, acting like the control planes on an underwater craft. But working together they ride the wind or use it to press down or relieve strain no matter where the wind blows from, or how strong. But my God, they have to sense and react in microseconds! How in time do they do that?" he demanded.

"Are you really asking *me*?" Dom Felix was awed and genuinely humble.

"I go find out," said Kert Row, and pelted off. When excited he would speak in some idiom of his own, a sort of baby-talk. Dom Felix looked after him admiringly and turned back to contemplate the bristle of nervous wings.

Kert Row indeed found out, and returned with an explanation, not one word in ten of which Dom Felix understood. It was a welter of chips and microsensors, pressure-magazines, release valves, dynaflex and alloy cores, microcryogenic superconducting hairs, and lots more. *By definition not basic,* thought Dom Felix, *but it works.* He was overwhelmed with admiration for Kert Row's ability in this, to him, impenetrable area. He let himself float uncomprehendingly in this sea of words until he heard Kert Row say "—and you know what? It's an Arcan design."

"It's a what? I understood the Arcans had no technology to speak of."

"Right. They haven't. They *grow* the wings for their buildings. They have a central building in Arca with a tower thirty meters tall—in this wind!"

"Grow them?" Dom Felix asked.

"This is a crazy place," said the engineer, and it was a compliment to the place: this is a crazy toy-shop. "All the weather there ever was, one place or another; little ecological pockets, all kinds of mutati-potent radiation. But look, even on Terra we have little plants that fold their leaves when you touch them; why not a plant which adjusts its leaves to support the plant in variable hurricanes? Survival is survival."

"Well, that's basic," said Dom Felix, mostly to himself, and reflected that basics may be simple, but when you get all the way down, you don't get a thing or even a method: you get a principle. "Then why do we need all that hardware?"

"Because we're poison to Medean life-forms, just the way they are to us. We can't work with living plants or living anything, not with any reliability. We *can* work with their principles."

"That's what I just said," and only then did Dom Felix realize he hadn't said it aloud. He went away to meditate on the nature of basics and the nature of principle. And it was through this path that he secured the victory of Acceptance on Medea.

"I want to find the truth, the real truth, about something," he told Wallich one day. "And I think you're the one to ask. You are not a Nat, and you are not a Truform." He saw her tense, but only because by now he knew exactly what to look for, and was looking for it. My, she was cool.

She looked at him levelly. "And exactly what am I, in your eyes?"

"A real person."

It was quite the right thing to say. "What do you want to know?"

"Something that perhaps I shouldn't be asking. If I really shouldn't—will you keep my asking confidential and tell me anyway?"

She looked at him for a long moment, level eyes under a frame of heavy honey hair. She seemed to find in him a man who could keep a confidence, and perhaps by then she had one herself which might need to be kept. She nodded.

"Thank you." It was no idle push-button "thank you." "Nats are fertile, Truforms are not. Why?"

"Because of the way a Truform is designed and decanted. Realigning his DNA gives him whatever special talent is needed, but takes away his ability to reproduce. But why should that make a difference to him? He, she, can make love or have sex fun just like anybody else, and if it's children they want, they can get them by contract easily enough."

"He gets a special talent or structure and it costs him fertility. The one means the other."

"Everybody knows that."

Dom Felix smiled. "You'd be surprised at the things 'everybody knows' from time to time. Once everybody knew that old Terra was flat, and if you went too far you could fall off the edge, and it rested on the back of a big turtle, and the sun went around it."

She laughed. "No."

"Oh yes. Now everybody believes that the gen-gineers can't design in a new characteristic without eliminating fertility."

"Well, they can't. Or they don't. They never have. Dom Felix, what are you driving at?"

"I've just been fantasizing that maybe the Earth is round like a ball." He had at times a sudden and child-like smile, and he used it now. "I've been thinking that maybe the gen-gineers *can* inject a special characteristic without eliminating fertility—always could. They just don't."

"Well, they can't," she said positively. "And if they ever could—why in time haven't they? If they had, there wouldn't be this trouble between them and the Va—— er, Nats."

He spread his hands. "If I knew for sure, I could stop fantasizing about it. Wallich, will you check it out for me?"

"Well—sure, if you really want me to, although it's like finding out if we really breathe oxygen."

"Then find out if we really breathe oxygen," he smiled. "But Wally—find out carefully, all right? I'd as soon nobody knew I was wondering about it. And—be *careful.* It just might be a hot question—hotter than you realize."

"I don't believe it, but—all right, I'll be careful." She rose in a swirl of gossamer and went out.

Dom Felix leaned back in the lounger, which gently massaged his lower back, and began to meditate. He was interrupted after a time by a soft rapid chirping. "Aquare!" He opened his eyes: he was right. The bizarre creature squatted against the wall by the door, brushing his long strange hands together in his mode of laughter.

"You're laughing at me." Dom Felix said this without rancor. He had by this time become quite accustomed to the Medean's appearances, which seemed to be occurring more and more often. He had been told at his defrosting that the Arcans, like virtually everything else on Medea, had no conflict with humanity, no competition for anything with the possible exception of *lebensraum,* and there was still plenty of room on plenty of land and probably always would be. Medea's function in the universe—as Terrans conceived the universe—was to supply one single export: knowledge. There seemed no reason for Arcans, or even one Arcan, not to have the same motivation: to acquire knowledge without conflict, without competition, without friction. And if from time to time Terran and Arcan found one another funny, it was to be expected. Accepted.

"Laughing is I am intelligenter, you a foolish."

"What?"

"Laughing is I see you in shame."

"Aquare, I don't feel—"

"Laughing is pretense attack, all knowing is pretense," the almost uninflected voice, with its background of soft squeaks and gurgles, went on. Dom Felix stopped trying to respond, and began simply listening, trying to follow.

"Laughing is hiding afraid. Laughing is you unhappy, I happy I am not you." (Dom Felix realized at last that Aquare was making a list.) "Laughing is I give you happy then I happy with you. Laughing is I sudden-quickly admire. Laughing is I see I have no word to say. Laughing is I have no word to say, can not find word to say, no not ever and must say no more. Laughing is more-more-more." *Chirp-chirp.*

"Ah," said Dom Felix. "What you're saying is that there are many kinds of laughter and it can mean many different things. You couldn't be more right. Whole big books, whole studies, have been done about laughter. So . . . why were you laughing at me?"

"Sudden-quickly admire. Again. More."

"Well, thank you, Aquare. I really don't know what I might have done to earn it."

"All. So far."

"So far. You mean I'm on the right track. Going in the right direction."

"What is right?" There was no inflection to indicate that this might be a question, but what else, thought Dom Felix, could it be? *What is right?* What is right, for whom, under what circumstances, and, in the sweep of growth-and-change, for how long? *What is right?* That was a big one.

He laughed. *Laughing is I have no word to say,* and the Medean chirped right along with him.

They sat for a while in companionable silence. In his many encounters with the strange Medean—and he realized there had been a great many recently, an increasing number, as he moved about dropping his seeds of Acceptance—he had noticed that he was quite comfortable with the silent brief appearances, and with the conversations, short and long, shallow and brief, as they occurred, but also with the "being-together" kind of association. "Being-together," he murmured.

Chirp-chirp-chirp-chirp.

Wallich came in. "Dom Felix, I—oh."

Chirp-chirp. Aquare unfolded himself from his squat by the wall and went away.

"I hope I didn't—"

"He was just leaving anyway," Dom Felix overrode her. (How had he known that? *Had* he known that?) He had no time to think it through: words tumbled from the girl.

"I didn't ask anybody. I mean I did, but it wasn't anybody, it was the Central. I guess if you hadn't warned me I'd have wandered in and asked Jeth or Harrick or someone else in Gengineering but I didn't, I went to the computer, and you know what?"

"I think I do."

"It just read out: *EP*. I asked it if sterility was the result of characteristic injection and I got EP. I asked if DNA redesign necessarily resulted in sterility and it said EP. I asked the same question from every possible direction and that's all I got—EP, EP, EP."

"I don't know what EP means."

"Oh. Established Procedure. But you know, that's a dumb answer. That isn't an answer at all!"

"That's right."

"It's as if Central was programmed to answer any question like that, that way."

"That's right."

"How did you know, Dom Felix?"

"I didn't know. It's just—well, it had to be that way. Vags and Gengies and Mules—excuse me—and all that fear—there had to be something people just didn't know. That kind of fear always comes from something people just don't know. In this case it isn't this group or that group that doesn't know; nobody knows, so everybody's suspicious and afraid. Tell me something, Wally. About Established Procedure—who established it?"

"Oh, who knows? Gengineering's been done on Medea for a hundred years, and the procedures were coded back on Terra before that. The only variations we do here have to do with characteristic design: physical, mental, and not an unlimited number of those. The basic procedures—what produces a whole human being—well, they just are, that's all."

"The word for that is 'traditional,' " said Dom Felix, "and that brings about the rule of the dead hand. Wally, the reason I asked you to be careful in your questioning is that I thought we had stumbled on a deep dark deadly plot." His smile came and went. "It isn't. It's the dead hand. It's people who did right things the right way a long time ago—and the things they did lived after them, the same things, the same way, while the world and the universe changed around them. Ask Altair about Marxism and revisionism. Ask him about Catholicism and Luther. The greatest movers and shakers our species has ever known, the greatest thinkers, have, one and all, done one inexcusable thing: they died, and their accomplishments froze at that moment. Nothing in the universe ever stops except the human politick, the human solution to this problem or that; and when we stop, we fail. Stopping is the only unnatural thing there is; every force in nature, every object in the universe is in motion, changing, changing . . ." His mind re-echoed Aquare's almost uninflected *What is right* . . . Nothing, he thought, is right in all ways, for always. He was on his feet. "I'm going to the Big Chief." And he did, a bright-eyed black bullet, leaving a honey-haired technical synthesist staring after him in astonishment.

And somewhere out in the blowing dusk which is daytime on Medea, on his way back to his city, an Arcan brushed his hands together: *chirp. Chirp. Chirp-chirp* . . .

Stop and let me be you—the gesture of Acceptance—had yeasted through the enclave by the time the Big Chief passed the word, the final word which forever lubricated the dangerous friction between the factions. It was—had been—the secret of secrets, the psychological dynamite which might well have blown the human colonies to fragments blowing in Medea's treacherous winds, for arriving ships to find and wonder at. The secret was simply that sterility was not the price of special aptitude; that in the production of a Truform from normal human genes, sterility was accomplished in one programmed operation in the DNA alteration, and the applied special aptitude in quite another; in other words, the sterility was not at all necessary in the case of any individual—but it was essential to all. For without it the new trait was heritable, and the alteration of the gene pool was inevitable and unpredictable. To maintain the special ties Medea felt toward the mother planet, the possibility of a genuine alteration of species was unthinkable, so the Truforms were simply not permitted to breed. Yet their every other human attribute was preserved, for the sake of harmony on the colonies. It seemed an obvious and simple solution, and it was just on the point of failure when Dom Felix arrived. It must fail because it was an imposed solution; any solution imposed on a segment of humanity must fail eventually. Only government by consent of the governed can survive.

To explain this to the colonists at the outset might well have been impossible at the outset; to have this knowledge freely given to an Accepting society dissolved all tensions. To empathize; to feel with another's fingertips and to see out through his eyes, was the purpose of Acceptance and the means to its ends.

And Dom Felix wrought his miracle in just under four Terran months. And the Big Chief said to Dom Felix: ''Now tackle the Arcans.''

''They're just altogether goddam standoffish,'' Altair II explained to Dom Felix. ''I can almost understand their not offering us anything they have, but it just doesn't make sense for them not to take anything we offer. It would be all profit for them, no loss. We've designed ground transportation for them, for example, protective side-arms, boots to keep them from being bitten by the wild-life around here; but no, there they go, bare toes, on foot, at the mercy of these crazy winds and the crazy bugs and beasties. Don't think they gave us the winghouse. We observed them, we copied them, we engineered them our own way. But they never offered a thing.''

''What about that city of theirs? What do they do there?''

''Nothing! I mean, I really and truly kid you not—nothing. First of all, Arca is not a city. I'd call it some sort of a shrine if I thought for a moment they had a religion or some sort of reverential philosophy, but they haven't, or if they have, it's not visible to the naked eye. What do they do? Nothing! They sit around, that's what they do. If you have a chance to go there, don't bother. Central can give you all the holos you can take; if suicide is your hobby, you can bore yourself to death with them. Nothing's changed over there in the past century. They just sit there—no talk, no music, no rituals, and certainly no fun and games. No agriculture, no trade, no manufacturing. Every now and then a dozen or so get up and leave, walk away single file up into the mountains. Every now and then a dozen or so will walk back in. Whether they're the same ones or not, there's no way of knowing. They don't wear clothes or decorations, so how can you tell who's boss, or chief, or whatever? They don't use weapons, not even a pointed stick. They maintain Arca pretty much by hand—I must admit, they can do a hell of a lot with hands like those. And they just sit."

"What about Aquare?"

"By now you know as much as anyone—maybe more. He's spent more time with you than he ever has with anyone. Maybe he's some sort of freak. Maybe he's the only Arcan ever born who ever had a hobby, and we're it. One thing's sure: he's the only one who can talk to us or ever did. You can bet that as soon as we had that translator functioning we made more—over a hundred. We thought it was a real breakthrough, that we'd hold conferences, that we'd find specialists, that we had a short line to their history and their culture and their science, if any, to say nothing of their knowledge of the local wild-life.

"Well, forget it. We fixed up a harness for Aquare to tote some of 'em back to Arca, and he just politely wouldn't. 'There is no need.' That's all he would say about it. 'There is no need." So we trundled them out to Arca in a convoy of cycles. Tried to hand them out. The Arcans wouldn't take 'em. So we just had to pile them up and leave them there. They just left them where we put them, 'til they got kicked around and mostly lost. Bet there are still some lying around there."

"What about Aquare?" Dom Felix asked again. "I've never really talked to him about Medea, or the Arcans. Maybe he has . . . by God, he *has* led the conversation away from that. But there was always so much to talk about. A kind of philosophy that—well, that I can touch but not grasp."

"Oh sure—I know just what you mean. But hell, he isn't human and it would be stupid to expect him to think like one," Altair said. "But he's been no help whatever in the nuts-and-bolts of local flora or fauna or weather or, dammit, anything. Big Chief we had before, he got so sore about that that he locked Aquare out; forbade him the premises. Aquare didn't ask why, then or ever, didn't go away, stood out there in the wind for weeks until the Old Chief relented and let him back in. And he didn't ask why then, either." He shook his head. "But if you can make that Acceptance trick work on the Arcans, there's no end to the good it will do. How long do you think it takes us to learn as much about Medea as any one of those hop-toads could tell us in a single hour of real communication? Months, years, maybe.

"And while you're bring diverse species together," Altair added abruptly, "see what you can do about Wallich. She and I used to fun around a lot, and I don't mind telling you, I miss her."

"You don't see her much?" Dom Felix was surprised; but then, he had been busy.

"I don't see her ever! Not since the day you were defrosted. She's around you all the time, and doing her own work as well."

"She's been a great help. There's something very special about her. I'd give anything for her grasp of—well, of everything."

Altair nodded. "A synthesist. She was sired by one, a Truform. Also a synthesist, designed for it, but I do believe she's better than he was. There's only one head in this whole place that can compare with her, and that's your friend Kert Row. Seems kind of stupid, well, childish, you know what I mean? But he is to technology what Wally is to theory. A super-genius. It isn't what they know, which is plenty. It's how they think."

Dom Felix nodded. "It absolutely awes me. Well—if you like, I'll sound her out about you."

"I wish you would. Truth is, I'm surprised at myself. Never knew I'd miss her so much."

Dom Felix went to Arca. He was wise enough (and experienced enough) to understand that though the ultimate fruition of his mission was far in the future, it was accomplished. He was wise enough also to separate this observation from wishful thinking, and to trust that it was so. But a man like Dom Felix cannot be stopped just because he is finished, and the suggestion by the Big Chief (as an offhand whimsy) and by the historian Altair II (as an excited and highly complimentary solid suggestion) were enough to make Dom Felix realize that here was his ultimate challenge, and he rose to it. To bring Acceptance, not only between factions of humanity, not only between what seemed to be species and subspecies of humanity, but actually between humanity and another species entirely—this would be the achievement of his life.

He sat willingly, and then grimly, through endless hours of holo reports on expeditions to Arca, going back 112 terrayears, and, indeed, Altair II had been right when he said that nothing ever happens there. Once there had been a seism and a rift that tore almost a third of the central building away, and that created some interesting visuals as the Arcans, virtually without tools but for simple levers and a sort of hod with straps to carry materials, swarmed over the structure like disturbed ants and repaired it with surprising speed. The commentary at that point drew attention to something Dom Felix had already noticed—that each individual seemed capable of doing any task with the same degree of skill, and that all worked together with no apparent direction from a leader. They made no sound but for increased breathing when the load was heavy; there was no audible or visible signal from one to the other. Ants, at least, stop and "greet" one another, touch antennae. Bees "dance" to inform the hive. If the Arcans had an equivalent, it was not (or not yet) detectable. When asked how they communicated, or if not, how they could cooperate without communicating, Aquare droned "There is no need," through his translator, and, as he did so often, would not be budged further. And on two occasions the sensitive airfoils of a winghouse were not up to the insane swirling of the Medean winds and the structure was damaged. Twice—in a century. He saw the ground cycles of the Terran expeditions arrive, and the Terrans exploring, testing, and trying desperately to communicate with the passive Arcans, and failing two years ago as they had failed repeatedly in the previous ninety. He saw the translators offered, refused (ignored is a better word), piled up and, on successive later viewings, gradually scattered and lost. And Altair's comment that nothing ever happens in Arca turned out to be only too true. The main hall and its tower had changed virtually not at all since the first recordings. Outbuildings came and went, but not much. A dozen or a score of Arcans would file out once in a while, and could be seen trudging away into the mountains until the ''thick light'' obscured them. A dozen or a score would file out of the mountains and into the hall—whether or not they were the same ones there was no way of knowing. There was no noticeable sex differentiation and there were no young. ''There is no need,'' Aquare explained. (Explained?)

Until Dom Felix had absorbed all the information there was (and to do that without spending a lifetime, he had to ask the computer to report only changes and to delete all repetition) he kept his plans to himself, and absorbed a part of his mind with devising ways and means to persuade Aquare to guide him to Arca. Physical, geographical guidance was unnecessary, and there would certainly be no resistance or interference from the Arcans, but he liked to think he had formed some sort of a bond with the ubiquitous creature, and that he could expand if not exploit it. Some of his plans were quite elaborate, starting with a subtlety and sidling into the suggestion that he visit Arca and that Aquare accompany him. Many of them were scenarios of how the Arcan could be manipulated into suggesting it himself, together with Dom Felix's reluctance and gradual persuasion. Always he encountered the difficulty of dealing with a creature who thought quite as well as a human but not *like* a human. In the end he decided to start from the top, or the bottom, or however one might describe irreducible directness, and he said,

''Aquare, I want to go to Arca and I want you to go with me.''

And Aquare performed the bubbly squeak which emerged from his translator as ''Yes.'' Dom Felix, totally prepared and tensed for a long campaign of trial and error, regrouping and flanking, almost physically stumbled, like a man running up seven steps when the architect had put only six in the flight. Ask him what it was he fell over.

Altair (after having said the inevitable ''what the hell for?'') told him he would have to start Aquare out first and drive out a couple of terradays later, because no Arcan had ever agreed to ride on a cycle, and the only alternative would be to hoof it with Aquare, which no human in his right mind would attempt, not on Medea. Aquare, who was present at this interchange, mumbled and squeaked and his translator said, ''I ride,'' and it was Altair's turn to fall over the step that wasn't there.

The cycle—and it was a new one, equipped with the stable platform Kert Row had designed—required very little instruction. The route to Arca had been scanned many times before, and was not only visibly depicted on a large screen, but was compared with the scanned reality as it travelled, so that any change—a boulder on the path, for example, or an animal over a certain size, or an Arcan pedestrian—would be noticed, alerted, and avoided instantly and automatically. There was no speed control as such, but a simple *Go* and *Stop* lever and an on–off *Optimum* button. With this in the on position, speed was a safe balance between performance and terrain. There were manual overrides for both speed and steering, but it would be hard to imagine a situation in which they would be useful. The machine was in constant communication with the enclave, not only with the ever-ready voice transmitter, which, though it could be turned off, would turn itself on again in even the slightest emergency, and a locator signal which had no override. It was powered by a battery which, for surface travel, was virtually inexhaustible, and which could leap the machine for days on end before it required recharging sufficiently to leap again. The leaps, ten to twenty meters at a time, were undertaken only when the vehicle's computers decided they were safe with all variables scanned: speed, slope, planned course, obstacles, and especially the wind. The strange surging gait of this machine had become traditional in the enclave, even working its way into some love poetry; it (the gait, not the poetry) was exhilarating to some Terrans, soothing to others, and absolutely nauseating to a few. Kert Row's refinement had lessened all these phenomena. It had yet to work its way into literature.

Two and a half days of foot-slogging for an Arcan equalled two and a half hours for the cycle, and Dom Felix was surprised to find that his burnoose was all the equipment he needed, and that departure time was completely up to him, since the holos had informed him (and informed and informed him) that the Arcans observed no special sleep time. He was pleased at the discovery, although there was a child-like quantum of disappointment in him that there were no safari-like preparations, no crowds waving goodbye from the gate, or a delegation to travel the first kilometer with them, no leis around their necks, nothing to speed them on their way except (from three different sources) "Going to Arca? What the hell for? Nothing ever happens at Arca." They simply walked out of the fifth corridor, the Rim of Pellucidar, battled their way across the dusky, blustery compound to the motor pool where the cycle, with its whispering gyros and its gleaming transparent canopy, awaited them. (It was Dom Felix who battled. Aquare's short flat fur was infinitely better suited to the pluckings and grabbings of Medea's whirling atmosphere than a flapping burnoose.) The attendant waited until they had reached the vehicle and had instructed Dom Felix to put one foot on the stirrup before he activated the canopy. It slid back just far enough to permit them to skin inside before it slammed shut, and even then it took half a minute for it to pump out the dust that had whirled in with them. The course chip had already been plugged in, and the screen was illuminated; all Dom Felix had to do was to push the *Go* lever. As the machine wheeled around to nose into the plotted course, he saw the attendant scurrying back to his shelter; the fellow didn't even wave. "Well," he said inanely, "here we go." Aquare apparently did not feel that this called for a response. They sat side by side in silence while the cycle scended and settled, slid and surged its sibilant way. They flashed past the strident glare of the Terran fields, a light so very different from the many glows natural to Medea, and on into the shifting dusk of the back country.

For a while Dom Felix attended to the passing scene, but it became an effort; there is a sameness to the many differences in the topography of Medea, and it is not easy even while standing still for Terran eyes to take in detail. Bounding and sliding across and through it defeated the hope of seeing a spectacular formation or a fleeing animal, and the stable platform robbed the rush along a side-hill or the mounting of a slope of its reality. The Terran eye is magnetized by brightness, and he found himself paying more attention to the screen before him than to the view outside; it was like looking at a line drawing of the Mona Lisa instead of at the painting itself, and somehow, to his own irritation, finding that more satisfactory.

He was aroused from these confusing thoughts by a touch on his shoulder, and he turned to Aquare.

The Medean pointed his two long central fingers at the panel before him, where a small plate glowed green. He made a slight stabbing motion toward it. Dom Felix realized several things at once: first, that never, not once, even by accident, had Aquare ever touched him; the contact on his shoulder was so extraordinary that, light as it had been, and brief, he still felt its residual. Second, the control he indicated was the voice communicator to the enclave. Third, he was (also for the very first time) conveying something with gestures rather than speaking through his translator. Dom Felix quelled the reflex to blurt out a question, and spread his hands: *what do you want?*

Again Aquare stabbed toward the green-glowing plate. Dom Felix reached toward it—slowly, lest this not be what was meant—until he touched it. It immediately turned red, with a diagonal line: by ancient tradition: *Off*.

"Aquar——" But before the whole name was out, the Medean shot out a commanding hand, an unmistakable message. Dom Felix shut up. To his astonishment Aquare squatted on the deck in front of his seat and with the powerful beak in the palm of his hand drew out a locking pin. A panel came ajar; he opened it and reached inside. He did not fumble; he seemed to know exactly what to do. There was a faint click, and he rose up and sat back.

Dom Felix stared at him in utter astonishment. He had never seen Aquare operate a machine or device of any kind, and nothing Wallich or Altair had ever said about him hinted that he might have any comprehension of one. Further, nothing in those endless holos had demonstrated tool use, beyond the wedge and the lever; those powerful and flexible hands, and whatever instinctive, possibly preprogrammed genius for design it took to build the winghouses (significantly, a single and repeated pattern) was really no more remarkable than the nest of a bower-bird, or a beaver-dam, or a beehive. Yet here was Aquare, sitting back comfortably on the cushioned seat, chirping his mirth and saying authoritatively, ''Can talk now. Automatic voice recorder also off.''

''Aquare, you . . . how . . . I never knew . . .'' Dom Felix stopped spluttering and tried again. ''Why didn't you ever tell anyone that you—that you could—knew how to . . .'' He was spluttering again, so he stopped.

Chirp-chirp-chirp. ''There was no need.''

''Oh for God's sake, don't do that to me.''

Aquare, quite relaxed, said nothing. He seemed to be waiting. Dom Felix looked at the red-lit communicator switch, at the panel still ajar under the control-board. *Can talk now*. Can talk without being overheard, without being recorded. ''What is it you want to tell me, Aquare?''

Aquare turned toward him with his torso, averted his head, and again Dom Felix had to remind himself that the native did not have binocular vision. The turn of the body strangely intensified the feeling of being totally observed. The gentle burbling and moaning came through the translator as ''You give confidence.''

''Thank you.'' Something in Aquare's stillness told him this was not quite right. He amended it. ''If you mean what I think you mean—thank you.''

''Not thank me. Wrong confidence.'' It came haltingly; these were not words, apparently, that Aquare had used before.

Wrong confidence. What then would the right confidence mean? Make someone confident. Cheer someone up. Confidence . . . oh, the kind of confidence you keep. ''You mean, you have something to confide? That kind of—''

''Yes. No.'' A long pause. ''I confide. You not talk.''

''Go ahead. I won't interrupt.''

The lithe hands came up and together; the beaks clashed, once. No chirp this time—and this was another first; the very first time Aquare had exhibited impatience. ''Confidence,'' he said at last. ''I confide. You not talk. Never. Never. Never.''

''Ah.'' It came to him in a rush. ''Can I keep a confidence! Is that what you're asking? If you tell me something in confidence, can you trust me? Is that what you want to know? Is that why you—'' he gestured ''shut off the communicator and the recorder?''

''Confidence, yes.''

''Well then. Aquare,'' Dom Felix said devoutly, ''I give you my faithful word that whatever you say to me in confidence, I will never repeat to a single living soul."

"Soul." It was probably a question.

"I will never repeat a confidence to any person in any way."

"Never."

"Never."

Dom Felix set himself to receive revelations—shattering, amazing revelations. He watched in new astonishment as Aquare slipped off the seat, reached behind the panel, and turned on the recorder. He closed the panel, slipped in the locking pin, and gestured to Dom Felix to turn on the communicator. Dazed, Dom Felix did. (It was not until weeks later that he learned that such controls would respond only to the human hand, so designed that no falling object or carelessly placed cargo could activate it by accident; and that the Medean hand would not affect this type of switch. Just how much Terran technology did this creature understand?) He sat there staring at his companion and underwent a whole dizzying chain of reactions: disappointment, puzzlement, and when he opened his mouth to demand more information, anger, for the green listening glow of the communicator informed him that he could not do so without breaking the confidence he had so devoutly given only a moment before. Then admiration at the sheer skill of the Medean's manipulation—even though he had been its . . . subject? target? victim?—overcame him, and he laughed. He laughed, and Aquare chirped, and in good time they came to Arca.

The holos, Dom Felix thought, *are just too damn good.* He was by no means the first to have that thought; it had been a common observation and occasionally a battlecry for over a century before he left Terra. Psychologists and educators had cried doom over that technological refinement for a long time, lamenting the increasing tendency of Terrans to lie personally dormant in the glow of their holos, vicariously experiencing other places, other times for (sometimes) days at a time while automatic machines fed and massaged and evacuated them. It was argued on the one hand that the holos expanded the mind and multiplied experience and understanding, and that as the artificial qualitatively approached the real, the copy the original, there would effectively be no difference at all, with the ultimate good on the side of the perfected imitation, for it eliminated all the perils of real experience. On the other hand there always had been, there would always be, a portion of humanity which insisted upon its own real experience and was willing to run risks and pay the price of potential scars, agony and death. Or ridicule . . . the whole matter being yet another indication of the effort of the human animal perennially to separate itself into disagreeable factions, necessitating the existence of such movements as Acceptance, which alone could prevent the species from stinging itself to death by its own poison, like the scorpion.

These thoughts trickled through his mind as he sat on the slightly resilient floor with his back against the glossy, varnished wall of Arca's central building, the one with the aeronautical tower. Made entirely of the same material, light, strong, and composed of particles matted together in some way, the hall was bare of furniture of any kind. Irregularly placed patches of luminescence, part of the wall itself, glowed dimly, but they were so many that the light, at least on Medean terms, was adequate, though for a Terran it took some getting used to. Forty or so Arcans squatted against the walls or knelt or crouched out on the floor. He saw none lying down. Occasionally one would rise and leave, presumably to eat. The entire structure thrummed as it yielded to the ever-shifting pressures of the supporting wings, but due to the great size of the enclosed space, the overall note was far down toward the subsonic, and was felt rather than heard. There was also a perpetual susurrus, soft and sourceless, the result, probably, of particulate matter being constantly swept against and along the outside surfaces of the structure, the sound absorbed and diffused, delayed and mixed. It was like sitting inside a gigantic tympanum which was being energetically bombarded by snowballs made of absorbent cotton. There was no other sound, no speech, no song. There was no decoration, no art save for the beautifully poised substructures of the roof, but that was not so much art as engineering; a kind of visible logic, like the hexagonal form of a honey cell.

And all this, in depth and detail, had surrounded him for days in his research; he was completely familiar with every sight and sound and texture, and the difference between the holo and the actuality was slight indeed. It was this that brought up the thoughts of the function of holography in Terran culture, and "Going to Arca? What the hell for?"

He found out what the hell for.

Aquare, seated beside him, whimpered and burped into the translator, which said, "Food for you in cycle." The almost-monotone sounded harsh and loud in the big hall. No Arcan indicated any response.

"Thanks, Aquare. I know. I'm not hungry just now."

"Sleep." Damn it, thought Dom Felix, isn't it within the state of the art to design in some punctuation for that talk-box of his? *Sleep*. Would that be imperative, interrogative, informational, abstract, or something he hadn't thought of yet? He took a chance and said, "I'm not sleepy either."

Aquare said, "Confidence."

The scene in the cycle rushed back. "Absolutely, Aquare. You have my word. You may trust me."

"Trust. Yes."

Silence again. How in time, thought Dom Felix, do you bring Acceptance to people who can't, or anyway don't, communicate with you and can't, or don't, or maybe don't need to communicate with one another? They—

He gasped.

For perhaps fifteen seconds, he wasn't there at all—not in Arca, nor on Medea, nor anywhere else he had ever been or read about or been told about or holo'd.

The sky was white, dazzling, bright all over and brighter still at the distant horizon he faced. The ground was splintered rock, grays and browns nearby, smoky with distance as it receded. The land was treeless, and he grew on a high bluff, yearning toward the brightening horizon. All around him was a tinkling as the freezing wind, the good chill wind, moved his leaves and those of the other red-leafed, blue-veined plants around him. All bent toward the growing light, and spread. With a glorious flash the limb of a sun appeared, and as it rose it was very pale orange and its limb was enormous, a widening arc, huge and close and generous, profligate with the good, needed, orange light, pouring out across the prairie and shooting ahead of it long sharp shards and spears of shadow.

The ground shook and he was aware of the great creature which approached—an armored slug with many pairs of legs and heavy feet, and low-slung horizontal mandibles mowing across the crest of the bluff. It caught the red leaves, helpless in their starving dawntime extension, and fed as it moved, scalping a swath out of the gravelly ground. He knew he was in its path; flight never occurred to his plant self, fear hardly at all, for fear was simply unreasonable. When the jaws closed on him there was regret, and oh yes, agony for a moment, and something else:

Acceptance.

Dom Felix tried to open his eyes and could not: he had not yet closed them. He began to pant, clawed for a moment at the floor on each side, started up away from the wall, and then had to pull down his cowl to wipe the sweat that poured down into his eyes. "What *was* that?"

Wordlessly Aquare pointed to an Arcan hunkered against the wall to the right.

"I don't understand."

"Try."

. . . and he was weightless . . . no, free was a better word, riding warm wind. He looked ahead and saw others of his kind with wide curved wings and white, clean bodies. He looked down a thousand meters to a sparkling blue sea speckled with whipped foam. He looked across to his left and saw a long line of birds like himself, eleven of them, and understood that they were flying in a V formation, strong and easy, somewhere to go, everything right.

He blinked, and was back in Arca.

Shaken, he said, "And they said nothing ever happens in Arca," and tried to laugh.

Chirp-chirp-chirp. The sound was strange there; none of the others did it.

"Aquare—please."

Aquare averted his strange head to look at Dom Felix. He said, "Come with me." But when Dom Felix started up, he stayed him with a gesture, sat him back down.

. . . and they moved through a landscape, the Medean badlands, down from a mountaintop and into a pocket canyon with a crooked little lake at the bottom. It was heavily overgrown with low shrubs of many kinds and long-limbed, reaching trees. The wind was rather more merciful here in this sheltered valley, and it was easier to see without the perpetual whirl of dust-devils and shrouding clouds that plagued the coastal plains of the Ring Ocean. Dom Felix was Dom Felix now, not a plant or a bird; he sensed the presence of Aquare beside him and was aware, surprisingly without surprise, that they were both invisible to one another and to whatever, whomever, might be in the valley to see.

An animal was snuffling into a bush, whether to browse or to hunt, Dom Felix could not be sure. It was somewhat larger than a Terran fox; it was six—no, eight-legged, with a segmented body covered with fine red fur. As it backed out of the underbrush, Dom Felix could see the two small limbs hanging from the base of the neck, which was upthrust like the neck of a llama; the limbs were smaller and more slender than the legs, rather like the forelimbs of a kangaroo.

As they watched, another animal of the same species—or was it? It was larger, with longer forelimbs equipped with clawlike fingers, and—yes, it had only four legs and a short, straight, thick tail; a sort of centaur; this creature, without preliminaries, flung itself on the back of the first, digging its claws into the front of the first body segment, and began to copulate enthusiastically. Ah. Male with four legs, female with eight.

Everything seemed to mist over, and return again to clarity. A very small portion of Dom Felix's mind was amazed at this combination within him of intense observation and uncritical acceptance. *Watch now, think later.*

There was a change in the valley, probably seasonal, part of the complex gumbo of Medean weathers to which, as in all its kind, the vegetation had learned to accommodate. Bushes seen before were now leafless; new vines were rioting up the trees, which themselves had dressed themselves for some new occasion. Clearly, some time had passed.

Again he saw the two animals. The male hovered alertly near her. She had changed distinctively. Her hindquarters had blown up grossly, and the last pair of legs seemed barely able to support them, and had lost some of their mobility, so that they dragged rather than lifted. She seemed fairly unconcerned as she rooted among the underbrush.

Suddenly the male spun about and froze, alert, his forelimbs up and its claws splayed the way some crabs alert for danger. Down the slope toward him galloped a second male, ready apparently to crash straight into the first. At the last possible instant he swerved, lashing out with his right hind foot with a blow that would have disembowelled the other had it landed. But the animal guarding the female twisted deftly, avoiding the foot, and struck out with a forelimb, which seemed somehow to reach much farther than it should, and the taloned paw (hand?) struck the other a terrible blow in the back of the long neck, which, with the invader's downslope speed, served to somersault him down the hill, to land sprawling and sliding. He got painfully to his feet and started back up, but the sight of the other standing there unscathed, his forelimbs out and fairly quivering with eager readiness, apparently made him think again. He stopped, pulled a leaf off a bush, put it in his mouth, chewed it for a moment, then turned and trotted away.

The other turned back to the female, who had regarded this knightly conflict with dull disinterest. She had other concerns. Her heavy hindquarters had collapsed the spindly legs, and she was numbly dragging it along the ground. Dom Felix felt an urge to help her, to stop her, to keep her from injuring herself, but he was invisible, he wasn't really there, was he?

Very concerned, he watched the stretching in the last body-section, down in the groove between it and the next; and he saw it split and bleed. The female kept dragging it laboriously along the ground, now headed toward the thicker underbrush, the male following watchfully. She stopped at last, rested, and then suddenly lunged. The entire back portion broke almost entirely away, except for the end of the spine. Another lunge, and she was free of it altogether. It lay there under the bushes, the little legs twitching. Surprisingly, there was not a great deal of blood.

The female stood panting, ignoring what lay under the bush, and Dom Felix was horrified to see the male immediately fling himself upon her again, forelimbs and forelegs holding her immobile while he penetrated her somewhere in the center of what seemed more like a wound than anything else. He was soon finished, and flung himself off, to go and stand by the discarded thing lying in the leaves. The female moved off, beginning to snuffle for food again; the male gave her not a glance.

Again the scene misted over and cleared. Obviously, time had passed again. The male had trodden much of the nearby ground, as if in restless pacing, and the thing under the bush had undergone changes. It was smaller overall, much of the excess fat gone from it. It was obviously still alive, though the legs had atrophied to crooked little sticks. It quivered, and now and again gave little convulsive jerks. The male approached it, staring intensely in its sidewise way, and was apparently preoccupied when the attack came.

The second male (whether it was the one he had seen before or not, Dom Felix could not be sure) exploded on the scene as if from nowhere, landing on the first one's back and driving in a veritable blur of blows to the upright portion of the neck. The defender immediately fell and rolled over, dislodging the attacker. He gathered his four feet under him and leapt straight up, to come down with fearful accuracy on the attacker's head. Two strong kicks finished the job. He sank down, panting, to rest for a moment and then crouched over the corpse. With a series of blows with the hard spur in the center of his forelimbs, he cracked a line of cavitations along the crest of the skull, the way one might chip a line on a block of ice preparatory to cracking it in two. It was done with such expertise that it appeared to be an old skill, or an insect-like preprogramming. He then forced the long finger-like claws of both hands into the crack and strained. With a snap the skull opened like a book, and he plunged his face into it, gobbling.

Meanwhile the thing under the bush began to convulse in earnest, so much so that it actually turned over. One area of it—the half-healed, half-withered place where the spine had torn out—showed some agitation, and suddenly a sharp little probe appeared from inside, followed by a second. These two whipped and tore at the flesh, paused, trembling, whipped and tore again, until it could be seen that something was fighting its way out. As it gradually emerged and freed itself from the entanglements of what had to be the uterus, Dom Felix saw it to be a startlingly perfect miniature of the first female he had seen, with eight legs and two forelimbs with sharp little claws on them—the tools of its first emergence.

The male, blood and brains dripping from his long snout, stood over the—baby?—until it was almost out, and impatiently pulled it the rest of the way. From the center of the abdomen, between the second pair of legs, extended a vein, or tube—clearly the umbilical cord. This he grasped in his long fingers and broke. The infant began to crawl, and in minutes, to lift its segmented body clear of the ground and walk. It waddled blindly over to the shelter of the nearest bush and began poking its snout into the leaves, trying to feed. The male grasped the cord and from the ruin that was left from the birth, drew out a wrinkled, fist-sized, many-veined mass of tissue, the afterbirth or true uterus. This he immediately devoured, and went his way.

Dom Felix followed him, shocked, nauseated, and fascinated. There may have been another swift misting; he could not be sure, but it seemed now to be a different and lower part of the valley, the lake nearer, the mountain shouldering higher. The male approached the same female he had seen before, dropping her rear segment; Dom Felix knew because she had only six legs, not eight. She was in the throes of dropping the last pair yet again . . . *Aquare, do I have to go through this whole thing again?*

Apparently not; the scene misted and cleared, with just a glimpse of the male gulping down the afterbirth and the infant crawling away to the nearest shadows. Dom Felix found himself following the now-quadrupedal female, apparently not at all the worse for wear, beginning to rear and cavort and leap like a young goat, for no reason at all except for the joy of it. It took very little time for him to observe that this was female no longer, but a young, strong, immature, four-legged male.

The mist, and again the view of the adult male. He seemed to be having trouble keeping a steady gait as he trotted along the flat rock of a stream-bed above the lake. Suddenly he fell, tried to rise, could not. He lay for a while, gathering strength, and then twisted himself and began furiously attacking his own haunches as if plagued by an absolutely intolerable itch. Twice he stopped to rest and shift his body so he could attack it again, when by an unbelievable twist and a spastic wrench he literally tore off his own useless hindquarters. He fell back, gasping, now a biped with the spine now a long tail; and the dead hindquarters unmistakably carried with them the male organs.

At length the creature got to its feet, took a few tottering steps and but for a quick stoop and a touch on the ground with one of the wiry forelimbs, would have fallen. It tried again, with a little more success, and very soon was walking almost upright—weakly, certainly, but with increasing certainty.

The mist: then a mature, bipedal adult, perched on a rock, staring off into the distance. Under the rock, another, contemplatively chewing on a melon-like fruit. A third, poking along the stream-bed, apparently looking for whatever might be edible there. A young adult male emerged from the undergrowth and stood on the bank looking at the biped and licking his lips. The biped slowly raised both forelimbs and covered its head with them, upon which the others, on and around the big rock, came down, moving carefully and steadily, to gather around the one in the stream. The male stared at them, they stared back, and then the male reared, turned and trotted off. The bipeds watched him go, and then went back to their contemplations.

The mist, then Arca.

How long had it taken? Dom Felix had no chronometer with him; there was one out in the cycle, but he was not moved to go for it. Judging by the indices of hunger and thirst, he felt no more and no less than he had when that first vision exploded on him. ''Aquare, what are you doing?''

''Answering.''

Answering what? He hadn't asked anything.

''Yes you ask,'' rasped the translator. ''From defrost you ask, all day, all time.''

''Aquare! I didn't say anything! Can you read my mind?''

''Do not know read.''

''Do you know what I'm thinking when I don't talk?''

''Confidence.''

Dom Felix was a little nettled at this. ''I have promised and I'll stick to it. Do you know what I'm thinking?''

Aquare droned: ''Filthy little cannibalistic vermin. Also how the hell. Also what is he doing to me fear.''

''Should I fear?''

''Is no should. Is only is.''

With a touch of exasperation, Dom Felix rephrased it. ''Did you—do you intend to do me any harm?''

"No harm. Maybe hurt. Just truth."

"The truth cannot hurt," said Dom Felix triumphantly.

Chirp-chirp-chirp.

"Not with Acceptance, it can't," said Dom Felix in his Q.E.D. tone.

"Filthy little cannibalistic vermin is acceptance."

Dom Felix suspected, and rightly, a question mark on that one. "Aquare, I make no moral judgments on animal behavior. I do reserve the right to express disgust at what I find disgusting. You still haven't told me how you do this, what those—those pictures are."

"All sentient intelligences can do."

"Well, I can't."

Aquare said nothing. The nothing lasted a long time, and the more Dom Felix replayed that interchange, the more flustered he became. He did what he was trained to do: he confronted. "I think you have just said I am not a sentient intelligence."

"Yet."

"I could learn it, then. Here? From you?"

"Could."

Steaming, Dom Felix thought his thoughts.

"Not arrogance. Truth," responded the Medean, just as if Dom Felix had spoken aloud.

This could get to be a real nuisance. Hastening to safer ground: "What were those—uh—pictures I saw, the place with the white sky, the one with the birds?"

"Not pictures. Is real."

"Somewhere on Medea?"

"Not on Medea."

"The birds, that sea—that looked like Terra."

"Is Terra."

"How long ago?"

"Is now. . . . You don't believe."

"Of course I don't. It takes a beam of light fifty terrayears to travel that far!"

"This not light. This is now."

It was at this moment that the Receiver was born.

"Can you show me Terra again—Terra now?"

With one sweep of his head, Aquare scanned the entire chamber. "No one is being on Terra now."

I thought not. Wishing he could retract the thought, Dom Felix said, "I'd like you to explain that."

"This is place of reward. Arcans safe here. Arcans come, sit, be far places. Be any sentient intelligence, anywhere, now." Sensing Dom Felix's perplexity, he apparently decided to expand. "Reward," he said again.

"Difficult life. Near end, come here, sit, be anywhere. Enough, go back, end."

A sort of shrine, a retreat. He had the exasperating sense of almost understanding. "Aquare, why are you telling me this—me, when you have told no one else?"

In answer, Aquare mimicked the Acceptance gesture, hand on hand, hands raised, head bowed. It looked very strange when he did it. "You have Acceptance idea. You say, be him. Be her. Be some other. One step away, be bird on Terra. Be plant on white-sky place, no have name. I say before, maybe you very very great Terran. Maybe you most great Terran. Maybe you make all Terrans be any sentient intelligence anywhere, now."

"I'm sorry: I have to take this very slowly. You can teach me to live as—to *be* some other creature, see and feel what they are seeing and feeling right now, instantaneously? And then I can teach it to anyone else?"

"If you very great Terran. Yes. If no, no."

"You're not teaching me—you're testing me!"

"Both."

"Go ahead then. I have to tell you—I'm damn interested but I'm not convinced."

"You want see more—" The final word was not a word, but the flash of a picture—the quadruped male.

"Lord, no. I've had enough of that. Why did you give me that . . . that natural history lesson anyway?"

The answer came in pictures: a naked Terran, then, beside it, a child. No, not a child, a tiny, stooped, spindly, hairy humanoid, like—not like, it *was* Australopithecus. The "dawn man".

The figures remained. Beside them, an Arcan, perhaps Aquare himself, and beside it, the small, long-snouted, long-tailed Medean biped. The pictures held, obscuring all else, until it came to Dom Felix: "You're descended from that—that creature!"

The pictures faded, and Dom Felix rubbed his eyes, though it had not been with his eyes that he had seen them. Oh, my God. *Filthy little cannibalistic vermin.* He said sincerely, "Aquare, I *am* sorry. I couldn't be sorrier. I—I'm sure Australopithecus had some pretty awful habits too." He made the gesture.

He thought Aquare was about to return it but it was something else—the long fingers pointed across the hall to a squatting Arcan against the far wall. "Is Terra."

Dom Felix's vision was swept away before it could cross the room, to be replaced by that extraordinary sense of *being*. . . .

. . . of being strong and swift and perfectly adapted, and imbued with a sense of health and joy surpassing anything he had ever known. Sleek, streamlined, moving as if choreographed in the best of company: see them curving up out of water and swimming in air, the friends, the lovers, with their permanent smiles and their radiation of joy. This, however, was infinitely more than the ineffable rightness of red leaves under a white sky and the good hunger for pale orange light, more than climbing the wind on the way to a home-calling. A dolphin is more than a plant or a bird; a dolphin lives in more than speed and foam and joyfulness. To the five senses add a dozen more, some even now without names; touch and speak with them, live in them, weave them to intricacies beyond human comprehension. No living thing exists more immediately, more intimately with its here and its now than the dolphin; few are in closer contact with that timeless and continuing Self which appears dimly and flickering in some humans as what is called ''racial memory'', but which is, in the dolphin, a total presence. In that sense all dolphins are one dolphin, and have been since, by conscious decision, and for good reasons, they returned to the sea from their evolutionary adolescence on shore. The ''allness'' of all dolphins in space and time, is an analog and a microcosm of the unity of sentience throughout the universe. High evolutionary development is not a certification of membership in this unity; far and away most of its elements are no more advanced than the veined red foliage of the world of the white sky, yet have and permit access to other sentience from anywhere. Because of this, red plant and joyous dolphin share one basic: the fusion with this great Unity is prime, and individual self-survival is secondary. A dolphin will fight to the death to free itself from the net, but when the death comes, it is of little more importance than the loss of dead skin-cells from the greater body—to itself or to others of its kind. What it had when it was an individual was shared. When the individual is no more, the sharing endures and is immortal.

Much of this—because there is so much—escaped Dom Felix's grasp, but it would leave its mark on him permanently. What overrode it was the sight of the city.

The city nestled in a small deep cove flanked by pillars of rock—a huge one on the north side and a much taller, slender spire on the south. Most of the city was white, in conforming architecture with curved walls and slightly domed roofs, and overlooking it, perched on the cliffs which formed a backdrop to the town, were linked white buildings—nine of them.

Dom Felix knew that city intimately—had lived much of his Terran life in it, had involved himself deeply in its design and growth—most particularly in the chain of buildings atop the cliffs. The Research Center, and Acceptance Headquarters. There was certainly no mistaking it; the city was unique on all Terra. What filled him with astonishment and incredulity (ah no: credulity!) was that there, real and gleaming and *complete*, and, in addition, with that weathered look of something established and used rather than bandbox-new, were nine buildings—nine, when he had, on departure, said his farewells to four, some design plans, and some graded ground—plans which would take a half a careful century to complete.

He had given credence to these overwhelming Arcan experiences, and was aware of very little doubt as to the reality of these wonders, or that they might be other than what Aquare said they were. What he now saw in his dolphin-self was something that could hardly be a dolphin's concern, but was monumentally his: the projected construction on the cliffs was now complete, had been completed during the fifty-one years of his passage to Medea.

Therefore he was, he really was, looking at Terra *now*; he was looking at a faster-than-light transmission.

Humanity has always responded to that spur. Prove that a thing can be done, and humanity will find a way to do it, even if that way is not the same way. Witness the Terran winghouses. Witness man's flight: man learned that he could not fly like the birds, but he found a way to fly—and that way was higher and faster.

(But . . . *always* higher and faster?)

City and sea faded; the high arc of the dolphin's leap and its multiplied awareness left him suspended in Arca, overwhelmed—so much so that when Aquare spoke to him twice without a response, Dom Felix relaxed into the typical timeless stillness of Arcan meditation, ready to wait for however long it might take.

Dom Felix roused from his own depths at length, and said, "I need to know more." Simple words, with layer upon underlayer of inspiration, urgency, fascination, and successive explosions of planning.

"Yes."

Vision upon vision, with this swift partition of mist between them:

Arcans, single file, toiling through the badlands toward the mountains.

The Entry (not an Arcan word; the Arcans have no words)—not so much a cave-mouth or doorway but a myriad of overhangs, cavities, entrances which soaked up the pilgrims like a thread of water falling on a sponge.

Underground (of *course* underground! Would not a high culture, but a non-technological culture, find for itself some environment of continuity, not subject to the hellish attacks of Medean weather? And of *course* the Terran enclaves, preoccupied with their own survival, were as yet unaware of it!)—underground, the city, the country of the Arcans. Here was their agriculture (largely fungoid) and their animal husbandry, caged and corralled creatures of great variety, feed and excreta neatly sequenced through the farming, or its analogs. Here was their industry, such as it was, tools being hands and pincers, powerful limbs, sheer numbers, and that strange ability, uncaptained, to team—to move in concert or individually with near-perfect synchronization. It was largely a silent city, completely nonverbal, for they apparently had something better—something, at least, better for them; and they had as little use for machines as they had for words.

Here were the young and the females—and an explanation for the almost total similarity of all the Arcans Dom Felix had yet seen. The inhabitants were anything but similar to one another. The infants had ten appendages, and so had all the young until adolescence. Dom Felix was led through many scenes of regularization, organization, and ritual, most of which he could not begin to understand, but which he could acknowledge as their schools, their religious institutions, and their conventions. He saw no hospitals, and few injured or maimed individuals, though once or twice a damaged or even amputated part obviously healing, even regenerating. It occurred to him that a species evolved from those creatures he had seen in the pocket-valley, Promethean as they were, undergoing successive metamorphoses in each single lifetime, may well have regenerative abilities. As far as sicknesses were concerned—anything that survived on Medea was by that definition a prime survival type, and anything that had not killed them off by now, could not.

He saw courtship, and the choosings—a far cry from the coarse brutality of the couplings of the primitives; and once he was aware of these, he had to notice that only six-legged females were so wooed.

He began to recognize something akin to a family grouping; a centaur-like male, a six-legged female, an infant. Sometimes there were two males, one invariably older than the other.

When familiarity began to replace curiosity and confusion, Dom Felix was introduced to the more intimate and—could one say "sacred"?—aspects of the city's life.

He saw the metamorphoses, each surrounded by gentle ritual: the first birthing, which apparently changed the child into the marriageable female, and its two phases, the parting of the last body-segment, and the care and guarding it went through until its moment came and it delivered, witnessed in joy by the entire "family", and (ritual echoing a far-past biology) the delivery of the afterbirth to the male. Then the second birthing, which changed bride into male centaur, and the delivery of this afterbirth to the father of the new child.

Then the ritual of departure for the new centaur, no longer wife and mother, now single and free and male and ready to seek a wife.

And at last the ordeal of final metamorphosis—the separation of the male segment of the centaur, and the appearance of the Arcan bipeds known to Terrans—the totally mature, the completed.

It crossed Dom Felix's mind that this was a treasure-trove—that the likes of Altair II, anthropologists, comparative culturologists, would give anything in life to be able to study these people. The word "confidence" intruded so immediately and so forcefully on his reverie that he was snapped back to his presence in Arca, with Aquare beside him, that it frightened him. He looked at the impassive figure, fervently wishing that the Medean was capable of some sort of expression, of body-language, of some way of coloring his flat messages, but there was none except for the feeling within

Dom Felix that the creature was angry—angry at even the beginnings of the thought that the confidence might be violated.

No words passed at that point; Dom Felix's regret at his own half-formed thought, and the devout renewal of his promise, were sufficient. Or—perhaps Aquare needed the reinforcement, not because of the wayward thought, but for the revelations he was about to make.

The visions resumed.

There was the gathering of the bipeds, the Arcans he had known, and how the population watched their procession toward the place Dom Felix had called Entry. The bipeds filed through the entire city, with their arms strangely held with the forearms resting on their heads (where had he seen that before?) until they emerged on their way to the shrine, when they took them down.

There was the first copulation, performed on the maturing child by the head of the household, the centaur.

There was the solemn ingestion, after the first child was born, of the afterbirth by the father.

There was the similar ritual by the female's mate after the second birth.

And then, and then . . . and then there was the return pilgrimage to the city . . .

Dom Felix once read an account of the Parsis, or Parsees, an East Indian sect, written toward the end of the first millennium. They were a highly cultured people, and many of them travelled to other countries and achieved high places in government and industry. And no orthodox Parsi failed to plan his life and his affairs otherwise than to return home to die, nor failed to make arrangements to have his body returned should he die abroad. No Parsi escaped the curious, the intrusive, the impolite, the callous questioning about the details of a Parsi funeral, nor was unaware of the distaste, even horror, that these details evoked in other lands. No Parsi was so cultured, so civilized, so excellent in all his accomplishments nor so polished in his manners that he could eliminate this pall on his presence; the matter was certain to emerge sooner or later, and certainly more than once.

And this was the manner of a Parsi funeral: After the final services, the body was wrapped in cloth and laid on a litter and borne to a great stone tower, cylindrical, with no roof. The bearers would unlock and open a door at the bottom, carry their burden through a welter of broken dry bones to the center of the enclosure, set it down and leave as quickly as they possibly could.

At the approach of the funeral procession, the vultures began to clutter the sky, coming from everywhere to the tower, where they perched on the wall, more and more of them, fighting for places, wheeling and darting when at last there were none. And when the bearers left, the signal of the slam of the lower door sent the birds, scores of them, sometimes hundreds, plummeting down the stone chimney in a screaming storm, to tear and devour the corpse in minutes.

Despite the fact that the procedure was ecologically sound, despite that it denoted a sane evaluation of the mutability of the flesh and the freedom from it of the soul, the Parsis, no matter how superior their conduct, their religion, their culture, were regarded by many as barbarians because of this single aspect of their orthodoxy.

Witnessing the procession of returning pilgrims from Arca, and the waiting population that silently met them, Dom Felix was forcefully reminded of the Parsi rites. For when they were all within the city, walking steadily and sedately in single file, this time without the strangely defensive placement of forearms on heads, there was—must have been—some silent signal, for the Medeans, one and all, of all ages and degrees of maturity, surged forward and fell on the pilgrims; but for the silence, it was, to Dom Felix's mind, the same as the swoop of the Parsis' vultures. In moments the pilgrims were struck down, their heads cracked, their skulls torn open, and their brains scooped out and gulped down. The larger and stronger brought dripping handsful to the smaller and weaker, until every individual had had some part. Then the corpses were taken up and carried away to be mulched and returned to the soil of the agricultural sections.

''God. God! Oh, my dear God . . .'' Dom Felix fell back on an old chant, to keep his feelings under rein until he could control them again. How much of them could be divined by the impassive Medean, he could not know.

''Can Acceptance accept,'' said Aquare at length. Clearly, a question.

''Well, of course. Acceptance makes no judgments, especially on ani—— I mean, other-species behavior. . . . Aquare, why do you—did they kill the pilgrims, the old ones?''

''For last sharing.''

''I don't understand that.''

''You have see now all of us life, what we do, how we do.''

''But not why, Aquare.''

''Could be you not want why. Could be you know why, not want know.''

''There is *nothing* I don't want to know!'' said Dom Felix heatedly. ''Now tell me: why were the old ones killed like that? What is 'the last sharing'?''

''To make later the—'' (Flash of high flight, flash of red leaves under a white sky.) ''Also the—'' (Flash of reverent removal of an afterbirth, raising it to the lips of a centaur.) ''Together, give the seeing.''

''I'm trying hard to understand. Are you telling me that by eating the brains of your own kind, and by doing the same with an afterbirth, you can gain that power—to project visions, to see anywhere faster than light can go?''

''That is how. You also.''

''What do you mean, me also?''

''Not so well perhaps. But can share from others.'' Apparently sensing Dom Felix's perplexity, Aquare went on: ''You eat brain of music man, you make better music. You eat afterbirth painter woman, you paint more good.''

''Nonsense!''

''Not nonsense. I talk Terrans many-much, long time, little with one, little another, much much Altair. Terran can have see-far like Arcan, like many more many else place. Terran always say no, turn away. Terran see *sadhu*—is right, *sadhu*?''

''Holy man,'' nodded Dom Felix.

''Terran see *sadhu*, *sadhu* have see-far, Terran say nonsense. Terran make medicine, medicine give see-far, Terran forbid take medicine, make medicine, study-learn medicine.''

''You've been talking to Altair, all right. I think you mean drugs, especially mind-altering drugs. They were regarded as dangerous—well, they *were* dangerous. So they were withdrawn, and research was stopped. But I don't see—''

''Terran find other Terran eat Terran. Make stop.''

''Cannibalism! Of course we stop it!''

''No animal Medea, no animal Terra stop it. All eat kind but you kind. You breed sister.''

Dom Felix did not have a sister, almost said so, then realized Aquare's words were not a statement, but a question. ''Would I mate with my sister? Certainly not.''

''All animal Terra, all Medea, mate sister, daughter. All animal Terrans make for eat, make for work, Terrans breed sister-brother, father-daughter.''

''And you are telling me that if Terrans committed incest and cannibalism, they would have the—the see-far?''

''Yes.''

''Then,'' said Dom Felix triumphantly, ''why don't our pigs and horses and tropical fish and cats and dogs have it?''

And Aquare intoned, ''Many do.''

How to dead-end an argument, thought Dom Felix. He tried another tack. ''Aquare, you haven't answered my question. About the old pilgrims.''

''Yes I answer. You want answer more. Yes. You see Arcan born, eight legs, two arms. Is female. Make one young, drop last legs. Make one more young. Drop two legs. Is male. Soon mate, one, two, more times. Drop two legs. Is no more male. Is no more female. Is Arcan. In brain is self of all life, female self, mother self, woman-love self, male self, male-love self. In brain is all selfs of past Medean before. Now is Arcan. come to time of reward. Come Arca. Now after life of change, change, now no change, now rest. Now stay still, see-far to here-place, there-place. Each Arcan sometime find new place, share, share.

"Time comes to die. Old now. One more share to do. Go home. Last share."

"Do they always make it back, the old ones? Suppose they die on the way?"

"All share."

All share. Dom Felix could imagine it—the old Arcans gathering around the dying one on the trail, cracking the skull, slurping the brains, throwing the carcass off the trail.

"Acceptance."

"If that was a question—of course Acceptance applies—acceptance of all you are and all you do. Do you doubt it?"

"Acceptance accepts Medean."

Dom Felix understood completely, and deliberately refused to respond to it. With great precision, Aquare had nailed the fact that Terra would not, probably could not, accept these practices for itself, no matter what the reward.

He had forgotten that speech was his convenience, not Aquare's, and was not necessary to the Medean, who knew perfectly well what he thought and felt.

Aquare rose, and Dom Felix rose with him. Aquare said, "Arca here to be near Terrans. Be near, Aquare go to Terrans. Hope join Terrans in the see-far, hope Terrans learn join sentience everywhere. No hope. No hope. Then come you. Is hope. Acceptance say all learn feel like all. I be you. I be you young old male female big little, anything. Is hope. Is hope. I bring you Arca, tell everything. You not most great Terran. You not great Terran. You only one more Terran. Is no hope. No hope.

"Ask Altair why dolphins never bite." And he took off his translator and threw it on the floor.

And Dom Felix stood for a long time after Aquare sat down against the wall, and spoke to him, and shouted at him, and picked up the translator and thrust it at him, but none of it made any difference; Aquare, like the rest of the Arcans, just sat. So Dom Felix returned to the enclave alone, to discover Wallich was pregnant with his child.

Altair II was a very old man when the transfax writer got him by Receiver from Terra. The historian was quavery and rambly, with occasional flashes of his wit and his ability to flip out aphorisms, but the writer, named Trudi, had him on hold for more than a week and got an amusing though possibly inaccurate story out of him. Since entertainment scored higher than accuracy, however, there was no permanent harm from that;

there seldom has been in the writing of history. Which actually is one of old Altair's own aphorisms.

The reason Trudi made the effort to find Altair II and speak to him is that she had learned somewhere that he was the only man still alive who had actually known Dom Felix. How he had survived so very long had a great deal to do with Dom Felix; he, Altair was a Double Tripper. Double Tripping was a privilege accorded long-term Terran settlers or their immediate children, should they wish to cease their subjective lives at a certain point and resume them a century or so later. This was done, if there was available space, by Tripping back to Terra in biostasis, but instead of being defrosted there, being stored until the next ship departed, and returning to Medea. Which Altair did, and lived a long life afterward.

Why? It had a lot to do with Dom Felix. There were other reasons, of course, but even those led to Dom Felix. ''Funny little fellow,'' he told Trudi. ''Crazy, of course. Not crazy, maybe—obsessed. Nothing wrong with that. All the movers and shakers of history have been obsessives. Reasonable people who can see both sides of questions cancel themselves out. One thing he did for me—he straightened me out. I'd been soaking myself for so long in the past that I had forgotten that the present is history too, and it pays to keep your eye on it. Now I'm a Double Tripper with a lot of years to boot and the present I had is now everybody's history, even mine. Heh!''

''About Dom Felix—'' Trudi nudged gently.

''Well, you see, he's why I Double-Tripped. I mean, I had to know—you see that, don't you? How could a historian not know a thing like that?''

''A thing like what?''

''What happened to him! I mean, a man comes to a planet, solves an insoluble social problem, solves an insoluble technical problem, changes the history of the whole human species and probably a lot of others along with it, then goes back to Terra and what? And what? Never another word about him, anywhere. A historian can't hold still for that!''

''All right,'' said Trudi to get this out of the way, to get on with her main thrust. ''All right then, what *did* happen to him?''

''According to the transcript I had tucked into my freeze-bottle when I went back, very little. I mean, a lot, but very little that explained anything. He joined the Brothers of Shame.''

''What is 'shame'?'' Trudi wondered.

''It's like guilt. He took an oath of silence and never wrote or said another word. The Brothers devote themselves to meditating on their sinfulness. Spend their lives at it and die inside the walls without even a death record. That's what he did and I'll never know why.''

''Ah,'' said Trudi, unable to think of anything else. Then: ''You were going to tell me how he invented the Receiver.''

''Yeh. Yeh. He came back from Arca, I was down at the cycle pool when he came in, he said we could have instant transmission, faster than light, he said it could be done. But not that way, he said, never that way. I didn't know what he was talking about."

"Wait a bit. What or where is Arca?"

"Oh, it's long gone. Settlement or something, Medean natives, intelligent species, long gone too, far as I know. Or maybe went underground. That's Medea for you, full of ecological pockets, mutative radiation, fast evolution; species come, species go. They say there's a whole race of intelligent balloons over on Castorview. An old theory, but now it's 'sposed to be proved. They—"

"Please—about Dom Felix."

"Yeh. Yeh. After he came back the natives abandoned Arca. Must've, no bodies around. They must've pulled the plug on their winghouse plant, so Arca just naturally blew away. The winghouses were—"

"Did Dom Felix—"

"I'm coming to that," said the old man testily. "The Big Chief was ready to give Dom Felix anything he wanted including his own job. Dom Felix, he brought the Acceptance idea and before you know it, an enclave ready to massacre itself turned into one big happy family. You see, Dom Felix—"

"I know about that part, Altair. Tell me about the Receiver."

"Receiver, yeh. There was this technician genius, Kert Row was his name, and Wallich, a Mule, a theoretical synthesist, best I ever saw. She was also, well, I had a real big thing for her for a while, well, she had a lot to do with me Double-Tripping a whole lot later, after what happened."

Patiently, "What happened?"

"Dom Felix got a little winghouse out in the compound and drafted Kert Row and Wallich to help him invent the Receiver. Mind you, he had no head for what it would take, but he had the drive for it and the sure certain knowledge it could be done, and between them Kert Row and Wallich had what knowledge and technique he didn't. How hard he drove them, and himself too, you wouldn't believe. And Wallich pregnant at the time too. He had some crazy idea it could be done some other way, some way that would tear Terra apart; he was afraid of that. More than afraid. Terrified. Anyway, bioenergetics was the key to it, and Wallich was one of the all-time greats at that. It was Wallich developed the defrosting technique with orgasm, the full organic bioenergetic field being better than anything ever invented to kick a Tripper out of stasis. That's how she came to be pregnant by Dom Felix. It couldn't've happened by anyone on Medea because she was a Mule, if you know what that is."

"I know what that is. Dom Felix—"

"Dom Felix was from Terra and she had his charts down to the last molecule. He was a good genetic match and she knew a lot of tricks to make it perfect. She treated his sperm-sample to make absolutely sure."

"Why did she do that?"

"Ah, Wally, she had a kink, a little neurotic kink, know what I mean? A Mule, you know; I remember she said to me once, 'Altair, oh God, what I wouldn't give to be a real woman.' I said, 'Well, you are, altogether, through and through,' and she cried and said she wasn't. Well, she was; Trudi, she had hair like—"

"Yes, yes. Still makes you cry, doesn't it? Ha ha! So she thought if she had a baby she would be more real than real. Now go on about the Receiver."

"Okay, okay. The three of them threw out the electromagnetic spectrum and the Einsteinian field complex, space, time, gravity, matter, and started outside all that, with bioenergetics as the beach-head. Well, it turned out not to be bioenergetics in the end, but an analog of it, something brand new. The vibratory—"

"Yes, I know how it works, everybody knows how it works. I want to know how it was invented. So—it was the three of them who pulled it off?"

"Well no, not exactly; it was Dom Felix. Kert Row got killed. He was coming out to Dom Felix's winghouse with something Dom Felix had sent him for when an underpillar from the house fell on him. Squashed his head. There was a mechanic from the cycle pool started an ugly rumor about that, said the sensor-chips inside the house had been tampered with, made the house lift and topple the pillar. Said he saw Dom Felix out there beating on Kert Row's head. Don't you believe it. I was out there myself not ten minutes after and saw Dom Felix working like a demon to get the pillar off him, not that it would've done any good, his head was split wide open. Dom Felix was crying, saying over and over, 'A way of thinking, that's all it is, that special way of thinking.' I knew he was going to miss that special way of thinking and I bet he did, but he got through anyway. Maybe it could only have been done by a crazy man and I told you, he really was kind of crazy.

"Like about the baby. When Wally was about to term he got the idea to deliver it himself. He was still the Big Chief's super-hero, mind, so he could get what he wanted. Wally, I think she loved him—then, not later, oh God no—but she was willing to do anything he wanted. So he did it, all by himself, and it was okay. And then he called the medics and they took her and the baby inside. And from that day on he never looked at either one of them and she wouldn't even mention his name or let anyone else. All she told me was he did something so disgusting that it made her too sick to think about it, and it should be forgotten before the kid grew up. And anyway, the kid died and after that she did too, and that's all I know."

"That's all you know about the Receiver?"

"That's all I know about Wally. The Receiver, well, you'd think without Kert Row and Wallich, Dom Felix would've ground to a halt. Far from it. Nothing could've stopped a drive like he had; and then, though he had no real training, maybe something of Kert Row's design genius and Wally's talent for synthesizing theories had rubbed off on him some way. Anyway, he did it by himself all right, and now you're talking to me, and all the settlements on all the planets are tight together again. . . . Funny thing, he started out by failing. Maybe that's what lit his spark."

"Failing? At what?"

"Remember, I told you about Arca, the Medean town or shrine or whatever it was. Dom Felix went out there to bring them Acceptance and begin a new era on Medea, love and brotherhood between two different species for the very first time. And that one time he sure laid a big egg. One visit from him and they cut out and we never saw them again."

"I never knew Acceptance to fail."

The old man laughed. "Maybe they just wouldn't accept him. I told you he was more than a little crazy."

"One more thing, Altair. Will you give me your impression of the Receiver, how you feel about it and what it has done?"

"I think it's wonderful and marvelous and a miracle and all the other stuff they say about it, and it certainly has tightened up communications, and anything that does that for humanity is something humanity needs, across space or across a room or across a bed. We are very good at talk and very bad at real communication. Everything we have ever accomplished we have done at the price of something important; it's as if we weren't capable of seeing all the factors of any problem. Someone brought rabbits to Australia for pets and the rabbits damn near ate up the continent. Someone found out petroleum could make a fuel and they used it for a fuel until, one way or another, it killed more people than any war ever has. Someone found a hormone that would prevent miscarriages and produced a whole generation of women—their daughters—with a new kind of cancer. Someone found out how to keep premature babies alive and produced a couple hundred thousand blind people. We were always like that. I guess we always will be like that."

"How do you apply that to the Receiver? Or do you?"

"Sure I do, but it's a feeling, that's all; not enough time has gone by to be sure. But you can see the signs. It's changed from a great discovery, a miracle, into a toy, same way all inventions do when they turn into entertainments. I just have this feeling about it. . . . Don't know what makes me think about it right now, but when Dom Felix came back from Arca that time, he asked me 'Why don't dolphins bite?', well, that was a line I used to spout back in those days: Dolphins are carnivores with plenty of sharp teeth, plenty of strength and speed, they could even take on a shark and drive it off; and men have captured them and humiliated them and tortured them and brainwashed them and never once has a dolphin attacked or bitten a man; they even have been known to help a man to shore. And I used to say, it's because they know something we don't, and they're sorry for us."

"I still don't understand how that applies to the Receiver."

"Neither do I, friend, not altogether. I told you, it's just a feeling I have—that by using little parts of whole things, we pass miracles that are a lot smaller than they could have been in their own time, in their own way. I see the Receiver turning into a toy, and it makes me sad.

"It takes a minimum of redesign to turn a crucifix into a pogo stick."

WAITING FOR THE EARTHQUAKE

Robert Silverberg

It was eleven weeks and two days and three hours—plus or minus a little—until the earthquake that was going to devastate the planet, and suddenly Morrissey found himself doubting that the earthquake was going to happen at all. The strange notion stopped him in his tracks. He was out strolling the shore of the Ring Ocean, half a dozen kilometers from his cabin, when the idea came to him. He turned to his companion, an old fux called Dinoov who was just entering his post-sexual phase, and said in a peculiar tone, ''What if the ground doesn't shake, you know?''

''But it will,'' the aborigine said calmly.

''What if the predictions are *wrong*?''

The fux was a small elegant blue-furred creature, sleek and compact, with the cool all-accepting demeanor that comes from having passed safely through all the storms and metamorphoses of a fux's reproductive odyssey. It raised itself on its hind legs, the only pair that remained to it now, and said, ''You should cover your head when you walk in the sunlight at flare time, friend Morrissey. The brightness damages the soul.''

''You think I'm crazy, Dinoov?''

''I think you are under great stress.''

Morrissey nodded vaguely. He looked away and stared westward across the shining blood-hued ocean, narrowing his eyes as though trying to see the frosty crystalline shores of Farside beyond the curve of the horizon. Perhaps half a kilometer out to sea he detected glistening patches of bright green on the surface of the water: the spawning bloom of the balloons. High above those dazzling streaks a dozen or so brilliant iridescent gasbag-creatures hovered, going through the early sarabandes of their mating dance. The quake would not matter at all to the balloons. When the surface of Medea heaved and buckled and crumpled, they would be drifting far overhead, dreaming their transcendental dreams and paying no attention.

But maybe there will be no quake, Morrissey told himself.

He played with the thought. He had waited all his life for the vast apocalyptic event that was supposed to put an end to the thousand-year-long human occupation of Medea, and now, very close to earthquake time, he found a savage perverse pleasure in denying the truth of what he knew to be coming. No earthquake! No earthquake! Life will go on, and on and on! The thought gave him a chilling prickling feeling. There was an odd sensation in the soles of his feet, as if he were standing with both his feet off the ground.

Morrissey imagined himself sending out a joyful message to all those who had fled the doomed world: *Come back, all is well, it didn't happen! Come live on Medea again!* And he saw the fleet of great gleaming ships swinging around, heading back, moving like mighty dolphins across the void, shimmering like needles in the purple sky, dropping down by the hundreds to unload the vanished settlers at Chong and Enrique and Pellucidar and Port Medea and Madagozar. Swarms of people rushing forth, tears, hugs, raucous laughter, old friends reunited, the cities coming alive again! Morrissey trembled. He closed his eyes and wrapped his arms tight around himself. The fantasy had almost hallucinatory power. It made him giddy, and his skin, bleached and leathery from a lifetime under the ultraviolet flares of the twin suns, grew hot and moist. *Come home, come home, come home! The earthquake's been cancelled!*

He savored that. And then he let go of it and allowed the bright glow of it to fade from his mind.

He said to the fux, ''There's eleven weeks left. And then everything on Medea is going to be destroyed. Why are you so calm, Dinoov?''

''Why not?''

''Don't you *care*?''

''Do you?''

''I love this place,'' Morrissey said. ''I can't bear to see it all smashed apart.''

''Then why didn't you go home to Earth with the others?''

''Home? Home? This is my home. I have Medean genes in my body. My people have lived here for a thousand years. My great-grandparents were born on Medea and so were *their* great-grandparents.''

''The others could say the same thing. Yet when earthquake time drew near, they went home. Why have you stayed?''

Morrissey, towering over the slender little being, was silent a moment. Then he laughed harshly and said, ''I didn't evacuate for the same reason that you don't give a damn that a killer quake is coming. We're both done for anyway, right? I don't know anything about Earth. It's not my world. I'm too old to start over there. And you? You're on your last legs, aren't you? Both your wombs are gone, your male itch is gone, you're in that nice quiet burned-out place, eh, Dinoov?'' Morrissey chuckled. ''We deserve each other. Waiting for the end together, two old hulks.''

The fux studied Morrissey with glinting, unfathomable, mischievous eyes. Then he pointed downwind, toward a headland maybe three hundred meters away, a sandy rise thickly furred with bladdermoss and scrubby yellow-leaved anglepod bushes. Right at the tip of the cape, outlined sharply against the glowing sky, were a couple of fuxes. One was female, eight-legged, yet to bear her first litter. Behind her, gripping her haunches and readying himself to mount, was a bipedal male, and even at this distance Morrissey could see his frantic, almost desperate movements.

"What are they doing?" Dinoov asked.

Morrissey shrugged. "Mating."

"Yes. And when will she drop her young?"

"In fifteen weeks."

"Are they burned-out?" the fux asked. "Are they done for? Why do they make young, if destruction is coming?"

"Because they can't help—"

Dinoov silenced Morrissey with an upraised hand. "I meant the question not to be answered. Not yet, not until you understand things better. Yes? Please?"

"I don't—"

"—understand. Exactly." The fux smiled a fuxy smile. "This walk has tired you. Come now: I'll go with you to your cabin."

They scrambled briskly up the path from the long crescent of pale blue sand that was the beach to the top of the bluff, and then walked more slowly down the road, past the abandoned holiday cabins, toward Morrissey's place. Once this had been Argoview Dunes, a bustling shoreside community, but that was long ago. Morrissey in these latter days would have preferred to live in some wilder terrain where the hand of man had not weighed so heavily on the natural landscape, but he dared not risk it. Medea, even after ten centuries of colonization, still was a world of sudden perils. The unconquered places had gone unconquered for good reason; and, living on alone since the evacuation, he needed to keep close to some settlement, with its stores of food and materiel. He could not afford the luxury of the picturesque.

In any case the wilderness was rapidly reclaiming its own now that most of the intruders had departed. In the early days this steamy low-latitude tropical coast had been infested with all manner of monstrous beasts. Some had been driven off by methodical campaigns of extermination and others, repelled by the effluvia of the human settlements, had simply disappeared. But they were starting to return. A few weeks ago Morrissey had seen a scuttlefish come ashore, a gigantic black-scaled tubular thing, hauling itself onto land by desperate heaves of its awesome curved flippers and actually digging its fangs into the sand, biting the shore to pull itself onward. They were supposed to be extinct. By a fantastic effort the thing had dug itself into the beach, burying all twenty meters of its body in the azure sand, and a couple of hours later hundreds of young ones that had tunneled out of the mighty carcass began to emerge, slender beasts no longer than Morrissey's arm that went writhing with demonic energy down the dunes and into the rough surf. So this was becoming a sea of monsters again. Morrissey had no objections. Swimming was no longer one of his recreations.

He had lived by himself beside the Ring Ocean for ten years in a little low-roofed cabin of the old Arcan wing-structure design that so beautifully resisted the diabolical Medean winds. In the days of his marriage, when he had been a geophysicist mapping the fault lines, he and Nadia and Paul and Danielle had had a house on the outskirts of Chong on Northcape, within view of the High Cascades, and had come here only in winter; but Nadia had gone to sing cosmic harmonies with the serene and noble and incomprehensible balloons, and Danielle had been caught in the Hotlands at double-flare time and had not returned, and Paul, tough old indestructible Paul, had panicked over the thought that the earthquake was only a decade away, and between Darkday and Dimday of Christmas week had packed up and boarded an Earthbound ship. All that had happened within the space of four months, and afterward Morrissey found he had lost his fondness for the chilly air of Northcape. So he had come down to Argoview Dunes to wait out the final years in the comfort of the humid tropics, and now he was the only one left in the shoreside community. He had brought persona-cubes of Paul and Nadia and Danielle with him, but playing them turned out to be too painful, and it was a long time since he had talked with anyone but Dinoov. For all he knew, he was the only one left on Medea. Except, of course, the fuxes and the balloons. And the scuttlefish and the rock demons and the wingfingers and the not-turtles and all of those.

Morrissey and Dinoov stood silently for a time outside the cabin, watching the sunset begin. Through a darkening sky mottled with the green and yellow folds and streaks of Medea's perpetual aurora, the twin suns Phrixus and Helle—mere orange-red daubs of feeble light—drifted toward the horizon. In a few hours they would be gone, off to cast their bleak glow over the dry-ice wastelands of Farside. There could never be real darkness on the inhabited side of Medea, though, for the oppressive great sullen bulk of Argo, the huge red-hot gas-giant planet whose moon Medea was, lay just a million kilometers away. Medea, locked in Argo's grip, kept the same face turned toward her enormous primary all the time. From Argo came the warmth that made life possible on Medea, and also a perpetual dull reddish illumination.

The stars were beginning to come out as the twin suns set.

''See there,'' Dinoov said. ''Argo has nearly eaten the white fires.''

The fux had chosen deliberately archaic terms, folk-astronomy; but Morrissey understood what he meant. Phrixus and Helle were not the only suns in Medea's sky. The two orange-red dwarf stars, moving as a binary unit, were themselves subject to a pair of magnificent blue-white stars, Castor A and B. Though the blue-white stars were a thousand times as far from Medea as the orange-red ones were, they were plainly visible by day and by night, casting a brilliant icy glare. But now they were moving into eclipse behind great Argo, and soon—eleven weeks, two days, one hour, plus or minus a little—they would disappear entirely.

And how, then, could there not be an earthquake?

Morrissey was angry with himself for the pathetic soft-headedness of his fantasy of an hour ago. No earthquake? A last-minute miracle? The calculations in error? Sure. Sure. If wishes were horses beggars might ride. The earthquake was inevitable. A day would come when the configuration of the heavens was exactly *thus*, Phrixus and Helle positioned *here*, and Castor A and B *there*, and Medea's neighboring moons Jason and Theseus and Orpheus *there* and *there* and *there*, and Argo as ever exerting its inexorable pull above the Hotlands, and when the celestial vectors were properly aligned the gravitational stresses would send a terrible shudder through the crust of Medea.

This happened every 7,160 years. And the time was at hand.

Centuries ago, when the persistence of certain apocalyptic themes in fux folklore had finally led the astronomers of the Medea colony to run a few belated calculations of these matters, no one had really cared. Hearing that the world will come to an end in five or six hundred years is much like hearing that you yourself are going to die in another fifty or sixty: it makes no practical difference in the conduct of everyday life. Later, of course, as the seismic tickdown moved along, people began to think about it more seriously, and beyond doubt it had been a depressive factor in the Medean economy for the past century or so. Nevertheless Morrissey's generation was the first that had confronted the dimensions of the impending calamity in any realistic way. And in one manner or another or another the thousand-year-old colony had melted away in little more than a decade.

"How quiet everything is," Morrissey said. He glanced at the fux. "Do you think I'm the only one left, Dinoov?"

"How would I know?"

"Don't play those games with me. Your people have ways of circulating information that we were only just beginning to suspect. You know."

The fux said gravely, "The world is large. There were many human cities. Probably some others of your kind are still living here, but I have no certain knowledge. You may well be the last one."

"I suppose. Someone had to be."

"Does it give you satisfaction, knowing you are last?"

"Because it means I have more endurance, or because I think it's good that the colony has broken up?"

"Either," said the fux.

"I don't feel a thing," Morrissey said. "Either way. I'm the last, if I'm the last, because I didn't want to leave. That's all. This is my home and here I stay. I don't feel proud or brave or noble for having stayed. I wish there wasn't going to be an earthquake, but I can't do anything about that, and by now I don't think I even care."

"Really?" Dinoov asked. "That's not how it seemed a little while ago."

Morrissey smiled. "Nothing lasts. We pretend we build for the ages, but time moves and everything fades and art becomes artifacts and sand becomes sandstone, and what of it? Once there was a world here and we turned it into a colony. And now the colonists are gone and soon the colony will be gone and this will be a world again, as our rubble blows away. And what of it?"

"You sound very old," said the fux.

"I am very old. Older even than you."

"Only in years. Our lives move faster than yours, but in my few years I have been through all the stages of my life, and the end would soon be coming for me even if the ground were not going to shake. But you still have time left."

Morrissey shrugged.

The fux said, "I know that there are starships standing fueled and ready at Port Medea. Ready to go, at the push of a button."

"Are you sure? Ships ready to go?"

"Many of them. They were not needed. The Ahya have seen them and told us."

"The balloons? What were they doing at Port Medea?"

"Who understands the Ahya? They wander where they please. But they have seen the ships, friend Morrissey. You could still save yourself."

"Sure," Morrissey said. "I take a flitter thousands of kilometers across Medea, and I singlehandedly give a starship the checkdown for a voyage of fifty light-years, and then I put myself into coldsleep and I go home all alone and wake up on an alien planet where my remote ancestors happened to have been born. What for?"

"You will die, I think, when the ground shakes."

"I will die, I think, even if it doesn't."

"Sooner or later. But this way, later."

"If I had wanted to leave Medea," Morrissey said, "I would have gone with the others. It's too late now."

"No," said the fux. "There are ships at Port Medea. Go to Port Medea, my friend."

Morrissey was silent. In the dimming light he knelt and tugged at tough little hummocks of stickweed that were beginning to invade his garden. Once he had landscaped this place with exotic shrubs from all over Medea, everything beautiful that was capable of surviving the humidity and the rainfall of the Wetlands, but now as the end drew near the native plants of the coast were closing in, smothering his lovely whiptrees and dangletwines and flamestripes and the rest, and he no longer was able to hold them back. For minutes he clawed at the sticky stoloniferous killers, baleful orange against the tawny sand, that suddenly were sprouting by his doorway.

Then he said, "I think I will take a trip, Dinoov."

The fux looked startled. "You'll go to Port Medea?"

"There, yes, and other places. It's years since I've left the Dunes. I'm going to make a farewell tour of the whole planet." He was amazed himself at what he was saying. "I'm the last one here, right? And this is almost the last chance, right? And it ought to be done, right? Saying goodbye to Medea. Somebody has to make the rounds, somebody has to turn off the lights. Right? Right. Right. Right. And I'm the one."

"Will you take the starship home?"

"That's not part of my plan. I'll be back here, Dinoov. You can count on that. You'll see me again, just before the end. I promise you that."

"I wish you would go home," said the fux, "and save yourself."

"I will go home," Morrissey answered. "To save myself. In eleven weeks. Plus or minus a little."

Morrissey spent the next day, Darkday, quietly—planning his trip, packing, reading, wandering along the beachfront in the red twilight glimmer. There was no sign all day of Dinoov or indeed of any of the local fuxes, although in mid-afternoon a hundred or more balloons drifted by in tight formation, heading out to sea. In the darkness their shimmering colors were muted, but still they were a noble sight, huge taut globes trailing long coiling ropy organs. As they passed overhead Morrissey saluted them and said quietly, "A safe flight to you, cousins." But of course the balloons took no notice of him.

Toward evening he drew from his locker a dinner that he had been saving for some special occasion, Madagozar oysters and filet of vandaleur and newly ripened peeperpods. There were two bottles of golden-red Palinurus wine left and he opened one of them. He drank and ate until he started to nod off at the table; then he lurched to his cradle, programmed himself for ten hours' sleep, about twice what he normally needed at his age, and closed his eyes.

When he woke it was well along into Dimday morning, with the double sun not yet visible but already throwing pink light across the crest of the eastern hills. Morrissey, skipping breakfast altogether, went into town and ransacked the commissary. He filled a freezercase with provisions enough to last him for three months, since he had no idea what to expect by way of supplies elsewhere on Medea. At the landing strip where commuters from Enrique and Pellucidar once had parked their flitters after flying in for the weekend, he checked out his own, an '83 model with sharply raked lines and a sophisticated moiré-pattern skin, now somewhat pitted and rusted by neglect. The powerpak still indicated a full charge—ninety-year half-life; he wasn't surprised—but just to be on the safe side he borrowed an auxiliary pak from an adjoining flitter and keyed it in as a reserve. He hadn't flown in years, but that didn't worry him much: the flitter responded to voice-actuated commands, and Morrissey doubted that he'd have to do any manual overriding.

Everything was ready by mid-afternoon. He slipped into the pilot's seat and told the flitter, "Give me a systems checkout for extended flight."

Lights went on and off on the control panels. It was an impressive display of technological choreography, although Morrissey had forgotten what the displays signified. He called for verbal confirmation and the flitter told him in a no-nonsense contralto that it was ready for takeoff.

"Your course," Morrissey said, "is due west for 50 kilometers at an altitude of 500 meters, then north north-east as far as Jane's Town, east to Hawkman Farms, and southwest back to Argoview Dunes. Then without landing head due north by the shortest route to Port Kato. Got it?"

Morrissey waited for takeoff. Nothing happened.

"Well?" he said.

"Awaiting tower clearance," said the flitter.

"Consider all clearance programs revoked."

Still nothing happened. Morrissey wondered how to key in a program override. But the flitter evidently could find no reason to call Morrissey's bluff, and after a moment takeoff lights glowed all over the cabin, a low humming came from aft. Smoothly the little vehicle retracted its wind-jacks, gliding into flight position, and spun upward into the moist, heavy, turbulent air.

He had chosen to begin his journey with a ceremonial circumnavigation of the immediate area—ostensibly to be sure that his flitter still could fly after all these years, but he suspected also that he wanted to show himself aloft to the fuxes of the district, to let them know that at least one human vehicle still traversed the skies. The flitter seemed all right. Within minutes, he was at the beach, flying directly over his own cabin—it was the only one whose garden had not been overtaken by jungle scrub—and then out over the dark, tide-driven ocean. Up north then to the big port of Jane's Town, where tourist cruisers lay rusting in the crescent harbor, and inland a little way to a derelict farming settlement where the tops of mighty gattabangus trees, heavily laden with succulent scarlet fruit, were barely visible above swarming strangler vines. And then back, over sandy scrubby hills, to the Dunes. Everything below was desolate and dismal. He saw a good many fuxes, long columns of them in some places, mainly six-leg females and some four-leg ones, with males leading the way. Oddly, they all seemed to be marching inland, toward the dry Hotlands, as though some sort of migration were under way. Perhaps so. To a fux the interior was holier than the coast, and the holiest place of all was the great jagged central peak that the colonists called Mount Olympus, directly under Argo, where the air was hot enough to make water boil and only the most specialized of living creatures could survive. Fuxes would die in that blazing terrible highland desert almost as quickly as humans, but maybe, Morrissey thought, they wanted to get as close as possible to the holy mountain as the time of the earthquake approached. The coming round of the earthquake cycle was the central event of fux cosmology, after all: a millennial time, a time of wonders.

He counted fifty separate bands of migrating fuxes. He wondered whether his friend Dinoov was among them. Suddenly he realized how strong was his need to find Dinoov waiting at Argoview Dunes when he returned from his journey around Medea.

The circuit of the district took less than an hour. When the Dunes came in view again, the flitter performed a dainty pirouette over the town and shot off northward along the coast.

The route Morrissey had in mind would take him up the west coast as far as Arca, across the Hotlands to Northcape, and down the other coast to tropical Madagozar before crossing back to the Dunes. Thus he would neatly touch base wherever mankind had left an imprint on Medea.

Medea was divided into two huge hemispheres separated by the watery girdle of the Ring Ocean. But Farside was a glaciated wasteland that never felt Argo's warmth, and no permanent settlements had ever been founded there, only research camps, and in the last four hundred years very few of those. The original purpose of the Medea colony had been scientific study, the painstaking exploration of a wholly alien environment, but of course as time goes along original purposes have a way of being forgotten. Even on the warm continent human occupation had been limited to twin arcs along the coasts from the tropics through the high temperate latitudes, and timid incursions a few hundred kilometers inland. The high desert was uninhabitable and few humans found the bordering Hotlands hospitable, although the balloons and even some tribes of fuxes seemed to like the climate there. The only other place where humans had planted themselves was the Ring Ocean, where some floating raft-cities had been constructed in the kelp-choked equatorial water. But during the ten centuries of Medea the widely scattered human enclaves had sent out amoeboid extensions until they were nearly continuous for thousands of kilometers.

Now, Morrissey saw, that iron band of urban sprawl was cut again and again by intrusions of dense underbrush. Great patches of orange and yellow foliage already had begun to smother highways, airports, commercial plazas, residential suburbs.

What the jungle had begun, he thought, the earthquake would finish.

On the third day Morrissey saw Hansonia Island ahead of him, a dark orange slash against the breast of the sea, and soon the flitter was making its approach to the airstrip at Port Kato on the big island's eastern shore. Morrissey tried to make radio contact but got only static and silence. He decided to land anyway.

Hansonia had never had much of a human population. It had been set aside from the beginning as an ecological study laboratory, because its population of strange life-forms had developed in isolation from the mainland for thousands of years, and somehow it had kept its special status even in Medea's boom years.

A few groundcars were parked at the airstrip. Morrissey found one that still held a charge, and ten minutes later he was in Port Kato.

The place stank of red mildew. The buildings, wicker huts with thatched roofs, were falling apart. Angular trees of a species Morrissey did not know sprouted everywhere, in the streets, on rooftops, in the crowns of other trees. A cool hard-edged wind was blowing out of Farside. Two fuxes, four-leg females herding some young six-leggers, wandered out of a tumbledown warehouse and stared at him in what surely was astonishment. Their pelts were so blue they seemed black: the island species, different from mainlanders.

''You come back?'' one asked. Local accent, too.

''Just for a visit. Are there any humans here?''

''You,'' said the other fux. He thought they laughed at him. ''Ground shake soon. You know?''

''I know,'' he said.

They nuzzled their young and wandered away.

For three hours Morrissey explored the town, holding himself aloof from emotion, not letting the rot and decay and corruption get to him. It looked as if the place had been abandoned at least fifty years. More likely only five or six, though.

Late in the day he entered a small house where the town met the forest and found a functioning persona-cube setup.

The cubes were clever things. You could record yourself in an hour or so: facial gestures, motion habits, voice, speech patterns. Scanners identified certain broad patterns of mental response and coded those into the cube too. What the cube playback provided was a plausible imitation of a human being, the best possible memento of a loved one or friend or mentor, an electronic phantom programmed to absorb data and modify its own program, so that it could engage in conversation, ask questions, pretend to be the person who had been cubed. A soul in a box, a cunning device.

Morrissey jacked the cube into its receptor slot. The screen displayed a thin-lipped man with a high forehead and a lean, agile body. ''My name is Leopold Brannum,'' he said at once. ''My specialty is xenogenetics. What year is this?''

''It's '97, autumn,'' Morrissey said. ''Ten weeks and a bit before the earthquake.''

"And who are you?"

"Nobody particular. I just happen to be visiting Port Kato and I felt like talking to someone."

"So talk," Brannum said. "What's going on in Port Kato?"

"Nothing. It's pretty damned quiet here. The place is empty."

"The whole town's been evacuated?"

"The whole planet, for all I know. Just me and the fuxes and the balloons still around. When did you leave, Brannum?"

"Summer of '92," said the man in the cube.

"I don't see why everyone ran away so early. There wasn't any chance the earthquake would come before the predicted time."

"I didn't run away," Brannum said coldly. "I left Port Kato to continue my research by other means."

"I don't understand."

"I went to join the balloons," Brannum said.

Morrissey caught his breath. The words touched his soul with wintry bleakness.

"My wife did that," he said after a moment. "Perhaps you know her now. Nadia Dutoit—she was from Chong, originally—"

The face on the screen smiled sourly. "You don't seem to realize," Brannum said, "that I'm only a recording."

"Of course. Of course."

"I don't know where your wife is now. I don't even know where *I* am now. I can only tell you that wherever we are, it's in a place of great peace, of utter harmony."

"Yes. Of course." Morrissey remembered the terrible day when Nadia told him that she could no longer resist the spiritual communion of the aerial creatures, that she was going off to seek entry into the collective mind of the Ahya. All through the history of Medea some colonists had done that. No one had ever seen any of them again. Their souls, people said, were absorbed, and their bodies lay buried somewhere beneath the dry ice of Farside. Toward the end the frequency of such defections had doubled and doubled and doubled again, thousands of colonists every month giving themselves up to whatever mystic engulfment the balloons offered. To Morrissey it was only a form of suicide; to Nadia, to Brannum, to all those other hordes, it had been the path to eternal bliss. Who was to say? Better to undertake the uncertain journey into the great mind of the Ahya, perhaps, than to set out in panicky flight for the alien and unforgiving world that was Earth. "I hope you've found what you were looking for," Morrissey said. "I hope she has."

He unjacked the cube and went quickly away.

He flew northward over the fog-streaked sea. Below him were the floating cities of the tropical waters, that marvelous tapestry of rafts and barges. That must be Port Backside down there, he decided—a sprawling intricate tangle of foliage under which lay the crumbling splendors of one of Medea's greatest cities. Kelp choked the waterways. There was no sign of human life down there and he did not land.

Pellucidar, on the mainland, was empty also. Morrissey spent four days there, visiting the undersea gardens, treating himself to a concert in the famous Hall of Columns, watching the suns set from the top of Crystal Pyramid. That last evening dense drifts of balloons, hundreds of them, flew oceanward above him. He imagined he heard them calling to him in soft sighing whispers, saying, *I am Nadia. Come to me. There's still time. Give yourself up to us, dear love. I am Nadia.*

Was it only imagination? The Ahya were seductive. They had called to Nadia, and ultimately Nadia had gone to them. Brannum had gone. Thousands had gone. Now he felt the pull himself, and it was real. For an instant it was tempting. Instead of perishing in the quake, life eternal—of a sort. Who knew what the balloons really offered? A merging, a loss of self, a transcendental bliss—or was it only delusion, folly, had the seekers found nothing but a quick death in the icy wastes? *Come to me. Come to me.* Either way, he thought, it meant peace.

I am Nadia. Come to me.

He stared a long while at the bobbing shimmering globes overhead, and the whispers grew to a roar in his mind.

Then he shook his head. Union with the cosmic entity was not for him. He had sought no escape from Medea up till now, and now he would have none. He was himself and nothing but himself, and when he went out of the world he would still be only himself. And then, only then, the balloons could have his soul. If they had any use for it.

It was nine weeks and a day before the earthquake when Morrissey reached sweltering Enrique, right on the equator. Enrique was celebrated for its Hotel Luxe, of legendary opulence. He took possession of its grandest suite, and no one was there to tell him no. The air conditioning still worked, the bar was well stocked, the hotel grounds still were manicured daily by fux gardeners who did not seem to know that their employers had gone away. Obliging servomechanisms provided Morrissey with meals of supreme elegance, that would each have cost him a month's earnings in the old days. As he wandered through the silent grounds he thought how wonderful it would have been to come here with Nadia and Danielle and Paul. But it was meaningless now, to be alone in all this luxury.

Was he alone, though? On his first night, and again the next, he heard laughter in the darkness, borne on the thick dense sweet-scented air. Fuxes did not laugh. The balloons did not laugh.

On the morning of the third day, as he stood on his nineteenth-floor veranda, he saw movements in the shrubbery at the rim of the lawn. Five, seven, a dozen male fuxes, grim four-legged engines of lust, prowling through the bushes. And then a human form! Pale flesh, bare legs, long unkempt hair! She streaked through the underbrush, giggling, pursued by fuxes.

"Hello!" Morrissey called. "Hey! I'm up here!"

He hurried downstairs and spent all day searching the hotel grounds. Occasionally he caught glimpses of frenzied naked figures, leaping and cavorting far away. He cried out to them, but they gave no sign of hearing him.

In the hotel office Morrissey found the manager's cube and turned it on. She was a dark-haired young woman, a little wild-eyed. "Hey, is it earthquake time yet?" she asked.

"Not quite yet."

"I want to be around for that. I want to see this stinking hotel topple into a million pieces."

"Where have you gone?" Morrissey asked.

She snickered. "Where else? Into the bush. Off to hunt fuxes. And to be hunted." Her face was flushed. "The old recombinant genes are still pretty hot, you know? Me for the fuxes and the fuxes for me. Get yourself a little action, why don't you? Whoever you are."

Morrissey supposed he ought to be shocked. But he couldn't summon much indignation. He had heard rumors of things like this already. In the final years before the cataclysm, he knew, several sorts of migration had been going on. Some colonists opted for the exodus to Earth, and some for the surrender to the Ahya soul-collective, and others chose the simple reversion to the life of the beast. Why not? Every Medean, by now, was a mongrel. The underlying Earth stock was tinged with alien genes. The colonists looked human enough, but they were in fact mixed with balloon or fux or both. Without the early recombinant manipulations the colony could never have survived, for human life and native Medean organisms were incompatible, and only by genetic splicing had a race been brought forth that could overcome that natural biological enmity. So now, with doom-time coming near, how many colonists had simply kicked off their clothes and slipped away into the jungles to run with their cousins the fuxes? And was that any worse, he wondered, than climbing in panic aboard a ship bound for Earth, or giving up your individuality to merge with the balloons? What did it matter, which route to escape was chosen? But Morrissey wanted no escape. Least of all into the jungles, off to the fuxes.

He flew on northward. In Catamount he heard the cube of the city's mayor tell him, "They've all cleared out, and I'm going next Dimday. There's nothing left here." In Yellowleaf a cubed biologist spoke of genetic drift, the reversion to the alien genes. In Sandy's Mishigos, Morrissey could find no cubes at all, but eighteen or twenty skeletons lay chaotically on the broad central plaza. Mass immolation? Mass murder, in the final hours of the city's disintegration? He gathered the bones and buried them in the moist spongy ochre soil. It took him all day. Then he went on, up the coast as far as Arca, through city after city.

Wherever he stopped it was the same story: no humans left, only balloons and fuxes, most of the balloons heading out to sea and most of the fuxes migrating inland. He jacked in cubes wherever he found them, but the cube-people had little new to tell him. They were clearing out, they said: one way or another they were giving up on Medea. Why stick around to the end? Why wait for the big shudder? Going home, going to the balloons, going to the bush—clearing out, clearing out, clearing out.

So many cities, Morrissey thought. Such an immense outpouring of effort. We smothered this world. We came in, we built our little isolated research stations, we stared in wonder at the coruscating sky and the double suns and the bizarre creatures, and we transformed ourselves into Medeans and transformed Medea into a kind of crazy imitation of Earth, and for a thousand years we spread out along the coasts wherever our kind of life could dig itself in. Eventually we lost sight of our purpose in coming here, which in the beginning was to *learn*. But we stayed anyway. We just stayed. We muddled along. And then we found out that it was all for nothing, that with one mighty heave of its shoulders this world was going to cast us off, and we got scared and packed up and went away. Sad, he thought. Sad and foolish.

He stayed at Arca a few days and turned inland, across the hot bleak desert that sloped upward toward Mount Olympus. It was seven weeks and a day until the quake. For the first thousand kilometers or so he still could see encampments of migrating fuxes below him, slowly making their way into the Hotlands. Why, he wondered, had they permitted their world to be taken from them? They could have fought back. In the beginning they could have wiped us out in a month of guerrilla warfare. Instead they let us come in, let us make them into pets and slaves and flunkies while we paved the most fertile zones of their planet, and whatever they thought about us they kept to themselves. We never even knew their own name for Medea, Morrissey thought. That was how little of themselves they shared with us. But they tolerated us here. Why? Why?

The land below him was furnace-hot, a badland streaked with red and yellow and orange, and now there were no fuxes in sight. The first jagged foothills of the Olympus scarp knobbed the desert. He saw the mountain itself rising like a black fang toward the heavy low-hanging sky-filling mass of Argo. Morrissey dared not approach that mountain. It was holy and it was deadly. Its terrible thermal updrafts could send his flitter spinning to ground like a swatted fly; and he was not quite ready to die.

He swung northward again and journeyed up the barren and forlorn heart of the continent toward the polar regions. The Ring Ocean came into view, coiling like a world-swallowing serpent beyond the polar shores, and he kicked the flitter higher, almost to its maximum safety level, to give himself a peek at Farside, where white rivers of CO_2 flowed through the atmosphere and lakes of cold gas filled the valleys. It seemed like six thousand years ago that he had led a party of geologists into that forbidding land. How earnest they had all been then! Measuring fault lines, seeking to discover the effects the quake would have over there. As if such things mattered, when the colony was doomed by its own hand anyway. Why had he bothered? The quest for pure knowledge, yes. How futile that quest seemed to him now. Of course he had been much younger then. An eon ago. Almost in another life. Morrissey had planned to fly into Farside on this trip, to bid formal farewell to the scientist he had been, but he changed his mind. There was no need. Some farewells had already been made.

He curved down out of the polar regions as far south as Northcape on the eastern coast, circled the wondrous red-glinting sweep of the High Cascades, and landed on the airstrip at Chong. It was six weeks and two days to the earthquake. In these high latitudes the twin suns were faint and feeble even though the day was a Sunday. The monster Argo itself, far to the south, appeared shrunken. He had forgotten the look of the northern sky in his ten years in the tropics. And yet, and yet, had he not lived thirty years in Chong? It seemed like only a moment now, as all time collapsed into this instant of now.

Morrissey found Chong painful. Too many old associations, too many cues to memory. Yet he kept himself there until he had seen it all, the restaurant where he and Danielle had invited Nadia and Paul to join their marriage, the house on Vladimir Street where they had lived, the Geophysics Lab, the skiing lodge just beyond the Cascades. All the footprints of his life.

The city and its environs were utterly deserted. For day after day Morrissey wandered, reliving the time when he was young and Medea still lived. How exciting it had all been, then! The quake was coming someday—everybody knew the day, down to the hour—and nobody cared except cranks and neurotics, for the others were too busy living. And then suddenly everyone cared, and everything changed.

Morrissey played no cubes in Chong. The city itself, gleaming, a vast palisade of silver thermal roofs, was one great cube for him, crying out the tale of his years.

When he could take it no longer he started his southward curve around the east coast. There were four weeks and a day to go.

His first stop was Meditation Island, the jumping-off point for those who went to visit Virgil Oddum's fantastic and ever-evolving ice sculptures out on Farside. Four newlyweds had come here, a billion years ago, and had gone, laughing and embracing, off in icecrawlers to see the one miracle of art Medea had produced. Morrissey found the cabin where they all had stayed. It had faded and its roof was askew. He had thought of spending the night on Meditation Island; but he left after an hour.

Now the land grew rich and lush again as he passed into the upper tropics. Again he saw balloons by the score letting themselves be wafted toward the ocean, and again there were bands of fuxes slowly journeying inland, driven by he knew not what sense of ritual obligation as the quake came near.

Three weeks two days five hours. Plus or minus.

He flew low over the fuxes. Some were mating. That astounded him—that persistence in the face of calamity. Was it merely the irresistible biological drive that kept the fuxes coupling? What chance did the newly engendered young have to survive? Would their mothers not be better off with empty wombs when the quake came? They all knew what was going to happen, and yet they mated. And yet they mated. It made no sense to Morrissey.

And then he thought he understood. The sight of those coupling fuxes gave him an insight into the Medean natives that explained it all, for the first time. Their patience, their calmness, their tolerance of all that had befallen them since their world had become Medea. Of course they would mate as the catastrophe drew near! They had been waiting for the earthquake all along, and for them it was no catastrophe. It was a holy moment, a purification—so he realized. He wished he could discuss this with Dinoov. It was a temptation to return at once to Argoview Dunes and seek out the old fux and test on him the theory that just had sprung to life in him. But not yet. Port Medea, first.

The east coast had been settled before the other, and the density of development here was intense. The first two colonies—Touchdown City and Medeatown—had long ago coalesced into the urban smear that radiated outward from the third town, Port Medea. When he was still far to the north Morrissey could see the gigantic peninsula on which Port Medea and its suburbs sprawled: the tropic heat rose in visible waves from it, buffeting his little flitter as he made his way toward that awesome hideous concrete expanse.

Dinoov had been right. There were starships waiting at Port Medea—four of them, a waste of money beyond imagination. Why had they not been used in the exodus? Had they been set aside for emigrants who had decided instead to run with the rutting fuxes or give their souls to the balloons? He would never know. He entered one of the ships and said, "Operations directory."

"At your service," a bodiless voice replied.

"Give me a report on ship status. Are you prepared for a voyage to Earth?"

"Fueled and ready."

"And the coldsleep equipment?"

"Everything operational."

Morrissey weighed his moves. So easy, he thought, to lie down and go to sleep and let the ship take him to Earth. So easy, so automatic, so useless.

After a moment he said, "How long do you need to reach departure level?"

"One hundred sixty minutes from moment of command."

"Good. The command is given. Get yourself ticking and take off. Your destination is Earth and the message I give you is this: *Medea says goodbye. I thought you might have some use for this ship. Sincerely, Daniel F. Morrissey. Dated Earthquake minus two weeks one day seven hours.*"

"Acknowledged. Departure level procedures initiated."

"Have a nice flight," Morrissey told the ship.

He entered the second ship and gave it the same command. He did the same in the third. He paused before entering the last one, wondering if there were other colonists who even now were desperately racing toward Port Medea to get aboard one of these ships before the end came. To hell with them, Morrissey thought. They should have made up their minds sooner. He told the fourth ship to go home to Earth.

On his way back from the port to the city he saw the four bright spears of light rise skyward, a few minutes apart. Each hovered a moment, outlined against Argo's colossal bulk, and shot swiftly into the aurora-dappled heavens. In sixty-one years they would descend onto a baffled Earth with their cargo of no one. Another great mystery of space to delight the tale-tellers, he thought. The Voyage of the Empty Ships.

With a curious sense of accomplishment he left Port Medea and headed down the coast to the sleek resort of Madagozar, where the elite of Medea had amused themselves in tropic luxury. Morrissey had always thought the place absurd. But it was still intact, still purring with automatic precision. He treated himself to a lavish holiday there. He raided the wine cellars of the best hotels, he breakfasted on tubs of chilled spikelegs caviar, he dozed in the warm sun, he bathed in the juice of gilliwog flowers, and he thought about absolutely nothing at all.

The day before the earthquake he flew back to Argoview Dunes.

"So you chose not to go home after all," Dinoov said.

Morrissey shook his head. "Earth was never my home. Medea was my home. I went home to Medea. And then I came back to this place, because it was my last home. It pleases me that you're still here, Dinoov."

"Where would I have gone?" the fux asked.

"The rest of your people are migrating inland. I think it's to be nearer the holy mountain when the end comes. Is that right?"

"That is right."

"Why have you stayed, then?"

''This is my home too. I have so little time left that it matters not very much to me where I am when the ground shakes. But tell me, friend Morrissey: was your journey worth the taking?''

''It was.''

''What did you see? What did you learn?''

''I saw Medea, all of it,'' Morrissey said. ''I never realized how much of your world we took. By the end we covered all the land that was worth covering, didn't we? And you people never said a word. You stood by and let it happen.''

The fux was silent.

Morrissey said, ''I understand now. You were waiting for the earthquake all along, weren't you? You knew it was coming long before we bothered to figure it out. How many times has it happened, since fuxes first evolved on Medea? Every 7160 years the fuxes move to high ground and the balloons drift to Farside and the ground shakes and everything falls apart. And then the survivors reappear with new life already in the wombs, and build again. How many times has it happened in fux history? So you knew, when we came here, when we built our towns everywhere and turned them into cities, when we rounded you up and made you work for us, when we mixed our genes with yours and changed the microbes in the air so we'd be more comfortable here, that what we were doing wouldn't last forever, right? That was your secret knowledge, your hidden consolation, that this, too, would pass. Eh, Dinoov? And now it has passed. We're gone and the happy young fuxes are mating. I'm the only one of my kind left, except for a few naked crazies in the bush.''

There was a glint in the fux's eyes. Amusement? Contempt? Compassion? Who could read a fux's eyes?

''All along,'' Morrissey said, ''you were all just waiting for the earthquake. Right? The earthquake that would make everything whole again. Well, now it's almost upon us. And I'm going to stand here alongside you and wait for the earthquake too. It's my contribution to interspecies harmony. I'll be the human sacrifice. I'll be the one who atones for all that we did here. How does that sound, Dinoov? Is that all right with you?''

''I wish,'' the fux said slowly, ''that you had boarded one of those ships and gone back to Earth. Your death will give me no pleasure.''

Morrissey nodded. ''I'll be back in a few minutes,'' he said, and went into his cabin.

The cubes of Nadia and Paul and Danielle sat beside the screen. Not for years had he played them, but he jacked them into the slots now, and on the screen appeared the three people he had most loved in all the universe. They smiled at him, and Danielle offered a soft greeting, and Paul winked, and Nadia blew a kiss. Morrissey said, ''It's almost over now. Today's earthquake day. I just wanted to say goodbye, that's all. I just wanted to tell you that I love you and I'll be with you soon.''

''Dan—'' Nadia said.

''No. You don't have to say anything. I know you aren't really there, anyway. I just wanted to see you all again. I'm very happy, right now.''

He took the cubes from their slots. The screen went dark. Gathering up the cubes, he carried them outside and carefully buried them in the soft moist soil of his garden. The fux watched him incuriously.

''Dinoov?'' Morrissey called. ''One last question.''

''Yes, my friend?''

''All the years we lived on Medea, we were never able to learn the name by which you people called your own world. We kept trying to find out, but all we were told was that it was taboo, and even when we coaxed a fux into telling us the name, the next fux would tell us an entirely different name, so we never knew. I ask you a special favor now, here at the end. Tell me what you call your world. Please. I need to know.''

The old fux said, ''We call it Sanoon.''

''Sanoon? Truly?''

''Truly,'' said the fux.

''What does it mean?''

''Why, it means The World,'' said Dinoov. ''What else?''

''Sanoon,'' Morrissey said. ''It's a beautiful name.''

The earthquake was thirty minutes away—plus or minus a little. Some time in the past hour the white suns had disappeared behind Argo. Morrissey had not noticed that. But now he heard a low rumbling roar, and then he felt a strange trembling in the ground, as though something mighty were stirring beneath his feet and would burst shortly into wakefulness. Not far off shore terrible waves rose and crashed.

Calmly Morrissey said, ''This is it, I think.''

Overhead, a dozen gleaming balloons soared and bobbed in a dance that looked much like a dance of triumph.

There was thunder in the air and a writhing in the heart of the world. In another moment the full force of the quake would be upon them, and the crust of the planet would quiver and the first awful tremors would rip the land apart and the sea would rise up and cover the coast. Morrissey began to weep, and not out of fear. He managed a smile. ''The cycle's complete, Dinoov. Out of Medea's ruins Sanoon will rise. The place is yours again at last.''

THE CONTRIBUTORS

POUL ANDERSON'S swashbuckling literary career—what he calls "making beer money"—has produced more than sixty books, including mysteries, non-fiction, and historicals as well as such notable science fiction and fantasy as *The High Crusade*, *Tau Zero*, *Brain Wave*, and *Three Hearts and Three Lions*; and such enduring characters as Nicholas van Rijn, Dominic Flandry, and (with Gordon R. Dickson) the Hokas. Winner of seven Hugos (one for "Hunter's Moon"), three Nebulas, a Locus award, the 1974 August Derleth Award and the 1977 Gandalf Award as Grand Master of Fantasy, Mr. Anderson numbers among his recent publications *Orion Shall Rise*, *Time Patrolman*, and *Past Times*. He and his wife, also a writer, live in Orinda, California.

HAL CLEMENT is distinguished for the painstaking scientific accuracy he brings to his science fiction (as Hal Clement), his non-fiction (as Harry C. Stubbs), and his astronomical paintings (as George Richard). Among his dozen books are *Needle* (and its sequel, *Through the Eye of a Needle)*; *Iceworld*; and *Mission of Gravity* (and its two sequels, *Close to Critical* and *Star Light)*. Mr. Clement's most recent books are *The Best of Hal Clement* and *Nitrogen Fix*. He lives in Milton, Massachusetts where, despite his literary success, he continues to indulge his first love, the teaching of high school science.

THOMAS M. DISCH'S malicious wit has graced nearly thirty books, including five books of poetry. Best known are *334*, *Camp Concentration*, *Fundamental Disch*, *Getting into Death*, *Fun with Your New Head* and *On Wings of Song* (for which he won the John W. Campbell Award). Mr. Disch's other awards include a Ditmar, a Locus, and the British Science Fiction Association Award. He originated the Philip K. Dick Memorial Award for paperback fiction. His latest books are *The Man Who Had No Idea*, *The Businessman: A Tale of Terror*, and *Torturing Mr. Amberwell*. Mr. Disch lives in New York.

DIANE DUANE (cartography) has published five novels, most recently *So You Want to Be a Wizard* and *The Door into Shadow*, a sequel to her first novel, *The Door into Fire*. She lives in Bala Cynwyd, Pennsylvania.

HARLAN ELLISON has published forty-three books; has edited the trailblazing anthologies *Dangerous Visions*, *Again, Dangerous Visions* (and the forthcoming *The Last Dangerous Visions*); has won three Writers Guild awards, seven-and-a-half Hugos, three Nebulas, eight Locus awards, two Jupiters, the British Fantasy Award, the Edgar Allan Poe award from the Mystery Writers of America, and the Silver Pen Award from P.E.N. International; and continues to upset complacency and rouse controversy in a thirty-five-year career that will not rest on its laurels. Among his books are *Deathbird Stories*, *Strange Wine*, *Shatterday*; two recent books of essays, *Sleepless Nights in the Procrustean Bed* and *An Edge in My Voice*; and the forthcoming retrospective, *The Essential Ellison*. Mr. Ellison resides in Sherman Oaks, California.

KELLY FREAS has, in nearly thirty-five years, set the standards for science-fiction art, providing thousands of interior illustrations and cover paintings for books, magazines (including a number of portraits of Alfred E. Newman for *Mad*), record albums (*News of the World* by the British rock group Queen), and NASA. Along the way he has won ten Hugo and four Locus awards. Mr. Freas's work has been collected in *Frank Kelly Freas: The Art of Science Fiction* and, most recently, *A Separate Star*. He and his wife, Polly, live in Virginia Beach, Virginia.

FRANK HERBERT began his string of more than twenty books with *The Dragon in the Sea (Under Pressure)* in 1955; other novels include *The Santaroga Barrier*, *Soul Catcher* and, most recently, *The Lazarus Effect* (written with Bill Ransom). He is, of course, best known for *Dune* (which was the only book of fiction offered in the original *Whole Earth Catalogue)*. To date, *Dune* has spawned four sequels and a multi-million dollar motion picture, won the Hugo, Nebula, Locus and Premio Cometa D'Argento awards, and is responsible for introducing most sf readers to the concept of ecology. Mr. Herbert is also considered the father of "Earth Day." He divides his time among residences in Port Townsend, Washington; Hawaii; and Manhattan Beach, California.

LARRY NIVEN'S twenty-plus books have won him five Hugos, a Nebula, two Ditmar and two Locus awards. His celebrated "Known Space" series culminated in *Ringworld* and *The Ringworld Engineers*, while *The Mote in God's Eye* (written with Jerry Pournelle) established a number of precedents in the science fiction field. Mr. Niven's latest books are *Dream Park* (written with Steve Barnes), *The Integral Trees*, and *Footfalls* (again with Jerry Pournelle). He lives with his wife, Marilyn, in Tarzana, California.

FREDERIK POHL has enjoyed successful careers as editor, literary agent, world-renowned lecturer, and writer; in the first capacity he won three Hugos for his work with *If* magazine. As writer he has produced, among his nearly fifty books, *The Space Merchants* (with C. M. Kornbluth), the "Starchild" trilogy with Jack Williamson, *Gateway*, *Man Plus*, *Jem*, *Starburst*; and in this role has acquired another Hugo, two Nebulas, two Locus awards, a Prix Apollo, the John W. Campbell Award and an American Book Award. Recent books are *The Merchants' War* (a sequel to *The Space Merchants)*, *Pohlstars*, *Demon in the Skull*, *Heechee Rendezvous*, *The Years of the City*, *Midas World*, and the autobiographical *The Way the Future Was*. Mr. Pohl, recently remarried, resides in Palatine, Illinois.

ROBERT SILVERBERG, despite several brief forays into retirement, remains one of the most prolific writers alive. Most present among his hundreds of books are *Gilgamesh the King*, *The Conglomeroid Cocktail Party*, *Lord of Darkness* and his "Majipoor" trilogy: *Lord Valentine's Castle*, *Majipoor Chronicles* and *Valentine Pontifex*. An extraordinarily fecund period beginning in the late 1960s produced thirteen major science fiction novels in just five years, among them *Son of Man*, *Nightwings*, *Thorns*, *The Man in the Maze*, *A Time of Changes*, *Downward to the Earth*, and *Dying Inside*. Mr. Silverberg holds two Hugos, four Nebulas, the Prix Apollo, Premio Cometa D'Argento, and the Jupiter, Milford, and three Locus awards. In 1956 he won his first Hugo as "Most Promising New Author" (two of the unknowns he beat out for this honor were Frank Herbert and Harlan Ellison). Mr. Silverberg raises cacti in Oakland, California.

THEODORE STURGEON helped shape science fiction's "golden age" with such works as "Microcosmic God", "Killdozer", "Thunder and Roses" and "Mewhu's Jet". His twenty-five books include westerns, historical novels, mysteries and novels of psychological suspense. Perhaps he is best known for *More Than Human* (winner of the International Fantasy Award), *The Dreaming Jewels (The Synthetic Man)*, *Venus Plus X*, and the short-story collections *E Pluribus Unicorn* and *Sturgeon Is Alive and Well . . .*; the latter includes his 1970 Hugo and Nebula award winner, "Slow Sculpture". Mr. Sturgeon's most recent books are *The Stars Are the Styx* and *Alien Cargo*; his fans eagerly await his long-promised *Godbody*. He commutes among residences in Springfield, Oregon; San Diego, California; and the main island of Hawaii.

KATE WILHELM holds a Nebula award for her short story, "The Planners"; her 1976 novel, *Where Late the Sweet Birds Sang*, won the Hugo, Jupiter, and Locus awards. Most recent of her two dozen books are *A Sense of Shadow*, *Oh, Susannah!*, *Listen, Listen*, and *Welcome, Chaos*. Considered one of the half-dozen most important prose stylists in the field of imaginative literature, she has demonstrated a wide-ranging talent that has brought her the much-sought-after "crossover" popularity in the world of general fiction. She lives with her husband, also an author and editor, in Eugene, Oregon.

JACK WILLIAMSON'S first story, "The Metal Man", appeared in *Amazing Stories* in 1928; the author was twenty years old. In his subsequent career spanning seven decades he has published more than thirty books, among them such classics as *Darker Than You Think*, *The Humanoids*, and the "Legion of Space" series. His recent books include *Lifeburst*, *Wall Around a Star* (with Frederik Pohl), *The Queen of the Legion*, *The Humanoid Touch*, and an autobiography, *Wonder's Child: My Life in Science Fiction*. In 1976, Mr. Williamson received the Grand Master Award of the Science Fiction Writers of America. According to the editor of this volume, "Mr. Williamson today writes with more vigor, intelligence, style and youthful vigor than he did in 1928." He makes his home in Portales, New Mexico.

This first edition of MEDEA: HARLAN'S WORLD edited by Harlan Ellison is limited to twelve hundred copies. The first four hundred and seventy five copies have been numbered and signed by the editor and contributors in a specially bound and boxed edition.

(Continued from front flap)

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William Rotsler

HARLAN ELLISON, a six-foot-eleven black man with an absolutely stunning slam-dunk, has, for the past thirty-five years, affected (for business reasons) the dress and demeanor of a five-foot-five Jew from Ohio. He currently resides on the Isle of Skye and raises linnets. Would this face lie to you?

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